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ABSTRACT

A need for remediation has been increasingly apparent within vocational education and job-related skill training. The current debates about basic skills and literacy reveal ambiguities in the definition of the problem and the focus of the concern. Telephone questionnaires and program visits provided information about remedial offerings within vocational education, Job Training Partnership Act programs, and welfare-to-work programs in 23 regions located in 9 states. Results show the type of remediation provided, the existing coordination, and the lack of information in the existing system. An assessment of the effectiveness of current remedial efforts indicates that an extensive literature describes good practice in adult education and remediation based largely on experience, but that there are few outcome evaluations of remedial programs, and many are based on inappropriate research designs. The dominant approach of "skills and drills" has proved to violate most conventions of good practice in adult education, and there is evidence that the pedagogical methods of most remedial programs are inappropriate. Alternatives to skills and drills are a "meaning-making" approach, "eclectic" approaches, functional context literacy training, and other programs that integrate remediation with job skills training. Issues with implications for future policy are effectiveness, appropriate pedagogy, and purpose of remediation. (Appendixes include 146 references, a 36-item bibliography, and the interview protocol.) (YLB)

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READIN', WRITIN', AND 'RITHMETIC ONE MORE TIME: THE ROLE OF REMEDIATION IN VOCATIONAL EDUCATION AND JOB TRAINING PROGRAMS

A Report to Congress, the Secretary of Education, and the Secretary of Labor

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In the research for this report, we spoke with administrators and supervisors of remediation in community colleges, technical institutes, area vocational schools, adult schools, JTPA programs, welfare-to-work programs, and community-based organizations in twenty-three regions. Almost without exception, these individuals—most of them extremely busy, grappling with the most difficult educational challenges and attempting to balance the demands of conflicting program requirements—were generous with their time and insights, and we thank them for their participation. Many others in the adult and remedial education community, again too many to acknowledge individually, shared their knowledge of the literature, of common practice, and of exemplary programs, and we thank them as well.

Several individuals read an early draft of this report and provided helpful (if not always complimentary) comments; these include Sarah Friedman, John Losak, Rena Soifer, Cathy Stasz, Brian Stecher, and Thomas Sticht. While we have incorporated most of their criticisms, we have also tried to follow our own advice and work within the "meaning-making" tradition that we present in our "Alternatives to Skills and Drills" section; so our interpretations of the current "system" of remedial education are ours alone.

SUMMARY

A furor has erupted in this country over basic skills. Complaints from the business community about the deficiencies of the labor force, criticism of the educational system, and alarm about high levels of illiteracy have all increased concerns about skill levels. Deficiencies in basic skills are also problems for the work-related education and job training programs, as many have felt unable to proceed with relatively job-specific training without first wrestling with the problem of underprepared individuals. Most postsecondary educational institutions and job training programs have increased the remedial education they provide, and most of them agree that the problem will become worse.

This report—part of a series from the National Center for Research in Vocational Education (NCRVE) examining the coordination among vocational education, Job Training Partnership Act (JTPA) programs, and welfare-to-work programs—examines the relationship between remedial education and job-related skill training because so little is known about this nexus. Given the proliferation of both work-related training and remedial education, one important issue is the coordination problem—both the coordination among the major providers of remedial education and the coordination between remediation efforts and job-specific training. A second crucial question is effectiveness. Since remediation is instrumental to achieving other goals—especially entry into and success in vocational education or job training—the question of whether existing remedial efforts are successful in preparing individuals for subsequent job training is paramount. A final issue which proves central—and is linked closely to that of effectiveness—is that of teaching methods. Despite the variety of institutions providing remediation, most programs use similar teaching methods—an approach we label "skills and drills"—despite several *a priori* reasons to doubt its effectiveness.

The Existing System

To examine these issues and to describe the vast array of remediation efforts linked to vocational education and job training, we completed telephone surveys of providers in twenty-three regions within nine states, supplemented by visits to a variety of typical and exemplary programs. The survey results enable us to describe common practices in

community colleges, technical institutes, adult basic education programs, JTPA programs, and welfare-to-work programs—publicly supported efforts that dwarf the voluntary literacy efforts and community-based programs that often receive more media attention. In all the communities we studied, remediation proves to be ubiquitous, with a wide variety of institutions providing some form of basic skills instruction. A second characteristic of local systems is that, in theory, they are structured to provide a hierarchy of programs leading from the lowest levels of literacy (and often math competency) to the collegiate level. In practice, however, the mechanisms of referral among programs are poorly developed; systems of guiding students through the maze are almost nonexistent; most programs have very modest ambitions; and dropout rates are high—so that the smooth continuum of courses which might exist is rare. Within such a system, the common practice of referring individuals to other institutions for remediation—one that appears to maximize cooperation and coordination—may in fact be counterproductive.

Within most remedial programs, a "new orthodoxy" about teaching methods has emerged despite the lack of any national standards or a national curriculum: In place of the uniform curriculum that prevailed fifteen years ago with progress based on seat-time, most programs now describe themselves as individualized, self-paced, with the majority also competency-based and open-entry/open-exit, allowing students to proceed at their own pace and to leave when they have mastered certain competencies. In addition, almost all of them follow an approach to teaching we label "skills and drills," in which complex competencies such as reading, writing, and mathematical facility are broken into discrete skills on which students drill.

The popularity of "functional context literacy training," which presents literacy training in the context of skills required on the job, and the emerging convention that students learn best when competencies are taught in some concrete application (or contextualized) suggest that coordinating remediation with job skills training might be effective. However, almost no remedial programs allied with vocational education and job training programs relate the content of remediation to the job skills training that will presumably follow. The most common practice is to require students to complete remediation before entering vocational education or job training—a sequential order implying that students who fail to complete remediation are denied entrance to vocational education and job training.

A final characteristic of the existing system is that there is almost no information about its activities and effectiveness. Some providers cannot even tell how many individuals are enrolled in remedial programs; almost none can provide any systematic information about completion rates (though they are clearly low); evaluations of subsequent effects are almost nonexistent, and most evaluations are methodologically flawed. The result is that there is almost no evidence to suggest which of the many programs now offered are effective and still less information that would enable teachers and researchers to improve current practice.

Effectiveness and Pedagogy

In the absence of direct evidence about which remedial efforts are effective, it is necessary to rely on indirect arguments. The consensus on good practice in adult education provides some guidance. The dominant teaching methods in remedial programs are those we describe as "skills and drills"—an approach which encompasses many assumptions about the classroom practices, the nature of individualization, the roles of teachers and students, the nature of learning as an individual and decontextualized activity, the nature of curriculum, and the sources of motivation. While these teaching methods are logical, internally consistent, apparently efficient, and well established at most levels of the educational system, their assumptions prove to violate many of the conventions of good practice in adult education. In addition, most individuals in remedial programs have failed to learn basic reading and math despite eight to twelve years of instruction in skills and drills within elementary and secondary schools; why the same approach should succeed for adults when it has previously failed is unclear. Indeed, it is all too plausible that the high dropout rates and paltry learning gains in most remediation efforts can be blamed partly on the dominant pedagogical methods.

The alternatives to skills and drills are difficult to describe precisely because they have not been codified or standardized. However, the approach we label "meaning-making" reverses the assumptions of skills and drills, leading to very different classroom practices, roles for teachers and students, and assumptions of curriculum. While it is difficult to find pure examples of meaning-making, many programs—especially in community colleges—can be described as eclectic, borrowing from both skills and drills

and meaning-making as teachers experiment with alternatives appropriate to their adult students. In addition, functional context literacy training, which "integrates literacy training into technical training," replaces the decontextualized content and methods of skills and drills with materials and exercises drawn from functional contexts—in most cases from the requirements of employment. However, functional context approaches have little to say about the other assumptions underlying teaching methods, and so can lead to programs that resemble meaning-making or programs that look like conventional remediation in almost all their details.

While programs integrating basic skill instruction and vocational training prove to be rare, a few provide distinct alternatives to skills and drills. Finally, it is possible to describe literacy programs based on meaning-making, though they are few and far between and their effectiveness is difficult to judge. However, they clarify that alternatives to the well-established practices of skills and drills can be developed, offering substantial promise in remedying some persistent problems in remediation—the motivational problem, the fact that many adults report skills and drills programs to be boring, the irrelevance of many programs to subsequent education or job training, the conclusion that most remedial efforts violate the conventional assumptions of good adult education, and the fact that many adults have previously failed to learn through skills and drills in the schools.

Directions for Future Policy

Virtually every administrator of remedial education forecasts increasing demand, and so reforms in the existing system are crucial to those who enroll, to the vocational education and job training programs who find themselves with underprepared students, and ultimately to employers and to the productivity of the economy. Several reforms can be undertaken without substantial increases in resources or institutional reconstruction. The first involves coordination and the current haphazard patterns of referrals among programs. Vocational education and job training programs should develop coherent policies about referrals to remedial programs to ensure that individuals are referred only to appropriate forms of remediation and to institutions of adequate quality. In addition, tracking mechanisms need to be developed to follow individuals among programs and prevent them from becoming lost in the system.

The intent of the first recommendation is to require programs to refer individuals only to effective remedial programs. This leads to a second recommendation: Given the near-complete absence of information about effectiveness, resources for evaluation need to be increased. Such results could not only prevent individuals from being referred to ineffective forms of education, but they could also provide information about improving instruction.

This leads naturally to a third recommendation: Given the dominance of methods based on skills and drills and the evidence against this approach, policymakers and administrators need to consider variations and improvements in teaching methods. We are convinced that substantial improvement in remediation will be impossible without moving to the more active forms of teaching associated with meaning-making. But whether these or other approaches to teaching adults are the most effective, our recommendation is that there needs to be much more experimentation with alternative pedagogies, along with evaluation designed to identify good practice.

Other reforms will require much more debate about what we as a nation require of our system of work-related education and training, including remedial education. The current discussions about deficiencies in the labor force do not clearly point out whether the underlying problem is one of basic academic skills, work habits, interpersonal abilities, "higher-order" capacities, or judgement. Another ambiguity involves who the beneficiaries of remedial efforts should be, and whether wage earners, employers with relatively low-skilled (and low-paid) jobs, or the economy as a whole is the target. If the problem is one of "higher-order" abilities, or interpersonal skills, or judgement, or a shift to a high-skill, high-productivity economy, then the current narrowly defined remedial programs—which generally confine themselves to low-level cognitive capacities—are wholly inadequate. From this vantage it may be necessary both to revise these programs substantially by providing much more intensive instruction, and to start the much more difficult reforms of reshaping the K-12 education system, changing the nature of teaching throughout the system and providing much more sophisticated (and expensive) forms of education to larger fractions of the population. These are reforms for the long run, of course, but they are unavoidable if we as a country are serious about developing a world-class labor force with capacities more sophisticated than simple reading, writing, and arithmetic.

INTRODUCTION

A furor has erupted in this country over basic skills. The business community has complained about the incompetence of the labor force, asserting that lower productivity—from an inability to read instructions and warning signs, mistakes in measuring and simple arithmetic, and poor communications skills—has contributed to the noncompetitiveness of the American economy. Others have raised concerns about the level of literacy in the American population, with estimates of the number of "illiterates" ranging from twenty million to sixty million. The worries over levels of basic skills are part of a concern with academic competencies that goes back at least to 1983, when *A Nation at Risk* presented the spectre of "unthinking, unilateral educational disarmament" as a result of declining school performance. This concern may even go back to the most recent "discovery" of illiteracy around 1970. However, those with longer memories remind us that there has been a virtually constant worry in this country about illiteracy, especially among immigrants and Blacks (Kaestle, 1991); indeed, an address by the U.S. Commissioner of Education in 1882 entitled "Illiteracy and Its Social, Political, and Industrial Effects" (Eaton, 1882) could easily have been part of the past decade's hand-wringing.

At the same time, quieter changes have been taking place in postsecondary institutions and job training programs to remedy deficiencies in basic skills. Virtually every community college in the country has expanded its remedial offerings (often termed developmental education), as have large numbers of four-year colleges. The demand for non-credit adult education, sponsored by a variety of school systems and postsecondary institutions, has by all accounts expanded enormously; however, as in the case of college programs, the lack of consistent data makes it impossible to quantify the trend. Programs sponsored by the Job Training Partnership Act (JTPA) have increasingly realized the need for more basic education to enable their clients to progress past unskilled entry-level jobs, and Congress has sought to direct JTPA toward longer-term training that incorporates more basic skills. Welfare-to-work programs for welfare recipients, funded by the Job Opportunities and Basic Skills (JOBS) program authorized by the Family Support Act of 1988, have incorporated yet another group into the public institutions preparing individuals for work, with many programs finding that they have to provide more remedial education than they had anticipated. The Department of Education has implemented a series of workplace literacy demonstration projects, and other proposals related to workplace literacy have come from the Department of Labor. Between the expansion of remedial education in

existing institutions and proposals for new programs, remedial education appears to be the fastest-growing component of the publicly funded system of education and job training.

The need for remediation has been increasingly apparent within vocational education and job training as well. A common complaint from vocational educators at both the high school and the postsecondary levels is that students come unprepared. They lack the basic skills in reading, writing, communications, and math necessary for reading instruction manuals, understanding blueprints and diagrams, writing simple letters, filling out forms, or calculating measurements in woodworking and metalworking. Similar complaints from JTPA and welfare-to-work programs, which typically enroll individuals even less well-prepared than those in vocational education, confirm the extent of the problem. As we examined vocational education, JTPA programs, and welfare-to-work programs (Grubb, Brown, Kaufman, & Lederer, 1989; Grubb, Brown, & Lederer, 1990), many reported that they were unable to proceed with their major purpose—providing relatively job-specific skill training for an increasing fraction of individuals. Clearly, then, deficiencies in basic skills have become problems for the work-related education and training system, just as they have for the academic side. The resolutions have varied, of course: Some programs have increased the amount of remedial education they provide with their own funds or have referred individuals to other programs, while others, limited by resources or philosophically unwilling to provide remediation, have rejected applicants not meeting minimum achievement levels. But virtually every program has had to wrestle with underprepared individuals, and almost all agree that the problem will become worse.

As a result, we began to examine the relation of remedial education to job-related skill training. One important aspect is the coordination problem, a familiar problem from many areas of education and social policy.[1] Given a proliferation of programs with overlapping responsibilities, it is common to see both cooperation and competition—

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[1] The National Center for Research in Vocational Education (NCRVE) is required by the Carl D. Perkins Vocational Education Act to report to Congress and the Secretary of Education on the coordination between vocational education and JTPA. This has so far resulted in two reports: Grubb et al. (1989) and Grubb et al. (1990), which investigated welfare-to-work programs as well as vocational education and JTPA because of the potential importance of JOBS programs as a source of training. This report is the third in this series. We chose to examine remediation efforts rather than job skills training that was the focus of the earlier reports for the following reasons: The need for remediation was so often mentioned by the programs we visited earlier; we knew of no prior examination of the relation of remediation to job skills training; and coordination in job skills training has been sufficiently studied—even overstudied. In addition to the earlier reports from the NCRVE, see Trutko, Bailis, and Barnow (1989) for a review of the extensive literature.

cooperation when programs send their clients to other programs or collaborate to provide services jointly and competition when programs stake out "turf" and fail to collaborate. Congress, as well as some state governments, has always been concerned about coordination because of the fear that competition would lead to duplication and waste. Conversely, cooperation promises certain economies, particularly if different agencies can establish a division of labor in which each provides those services at which they are best. As programs providing some form of remediation proliferate—with adult education; community colleges and technical institutes; JTPA programs; welfare-to-work programs; community-based organizations (CBOs) funded by JTPA and welfare, as well as other sources; firms with workplace literacy efforts; volunteer literacy campaigns; and public libraries all contributing in some measure—the coordination issue has become more important, and it appears to be one of the major concerns of those administering literacy programs.[2] Despite its potential importance, coordination among remediation programs has never to our knowledge been examined.

A second crucial issue is effectiveness. In our prior analyses of vocational education, JTPA, and welfare-to-work programs, we found that duplication and poor coordination are not as serious as is usually asserted and that a great deal of cooperation exists. What is more important and more difficult to assess is whether cooperation leads to more effective services. While it is reasonable to assume that coordination leads to greater effectiveness—because it typically expands the options open to individuals and allows different programs to "specialize" in those services they perform best—evidence about effectiveness is usually missing. In the case of remediation linked to vocational education and job training, the question of effectiveness is especially crucial because remediation is rarely seen as good in itself. Instead, it is instrumental to achieving certain work-related goals such as entry into a job skills program, improved performance in vocational programs, receipt of a GED to enhance (one hopes) the chance of employment, or mobility once an individual has found an entry-level job—or other personal goals linked to literacy such as the ability to read to one's children and the ability to participate politically. The question of whether remedial efforts achieve any of these goals is critical. Both in examining specific programs around the country and in looking at exemplary programs, we have searched for evidence of effectiveness. To be sure, the question of how one might

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[2] In a survey of state directors of adult education, Holmes, McQuaid, and Walker (1987) found that coordination was generally the third-ranked barrier to the development of effective adult literacy efforts, after lack of funding and lack of motivation among students.

measure effectiveness proves to be difficult—since there is substantial disagreement about the goals of remedial programs—but the issue of effectiveness is unavoidable.

In the case of remedial programs linked to vocational education and job training, a particular coordination issue linked to effectiveness is the relationship between the two components. For reasons we examine more closely in the section entitled "Alternatives to Skills and Drills," an increasingly popular proposal—though a rare practice—is remedial education whose content is in some way linked to, or drawn from, or integrated with vocational skills training. This proposal, perhaps best known in the form of "functional context literacy training" (Sticht, Armstrong, Caylor, & Hickey, 1987; Sticht & Mikulecky, 1984), has some obvious advantages in providing motivation for individuals to complete programs and in giving remedial education a relevance, or context, that it might otherwise lack. More generally, functional context literacy training raises the question of whether and how remedial education and job skills training should be linked. This is, in effect, another issue related to coordination—not coordination among different institutions providing remedial education and skills training, but coordination between remediation and skills training.

The proposals to adopt functional context training raise a more general question about the pedagogies used in remedial programs. Despite the variety of institutions providing and funding remedial education, most programs use very similar teaching methods—an approach we label "skills and drills." Unfortunately, there are several *a priori* reasons to doubt the effectiveness of skills and drills, and so—in the interests of examining the effectiveness of remediation—it becomes necessary to examine alternative pedagogical methods. Issues of pedagogy are generally unfamiliar to those policymakers and administrators who shape public programs, so our discussion of pedagogy may seem foreign. But we are convinced that without confronting teaching methods and their underlying assumptions, it will be difficult to improve the current systems of remedial education.

To analyze the issues of coordination, effectiveness, and pedagogy, we have used several different kinds of evidence. Remediation in community colleges, adult education programs, JTPA programs, and welfare-to-work programs is a vast, sprawling enterprise, difficult to describe in its variety. Indeed, each of its components is bewildering. In a first attempt to describe this unwieldy "system," we undertook telephone surveys of providers

in twenty-three regions within nine states. These surveys describe the major patterns in remediation, as well as the extent of coordination among programs. In addition, we visited a variety of remedial education and job training programs—choosing some which appear typical and some which were nominated by others as being exemplary, including computer-based approaches as well as conventional classroom programs. These visits provided considerable insight into the responses we received from telephone surveys, as well as more information about what actually happens within remedial programs. In particular, these visits clarified the dominance of skills and drills and enabled us to distinguish what is different about other programs we describe in our "Alternatives to Skills and Drills" section. Finally, we have relied extensively on the literature about remediation, including the enormous amount of recent writing about literacy. While this literature is largely prescriptive and hortatory rather than empirical, and, thus, largely useless as a guide to current practice, it does help clarify the differences among program goals and methods.

This report covers a variety of programs, but it cannot be comprehensive. We concentrate on programs for adults that are linked to vocational education and job training; therefore, we do not analyze remedial programs aimed at in-school youth or JTPA-funded programs for youth. We concentrate on publicly funded programs, not private or charitable efforts, largely because of our concern with federal and state policy in vocational education and job training. (However, some rough numbers illustrated in our second section, entitled "The Current State of Remedial Efforts," show that publicly funded programs also provide the vast majority of remediation.) We also concentrate on programs for native speakers of English rather than English as a Second Language (ESL) programs. Although providers of adult education, job training, and vocational education have been overwhelmed by the demand for ESL in many regions of the country, ESL should not be considered remedial in any way; it presents its own teaching problems that are different from those in remedial programs for native speakers. Finally, we do not define literacy or remediation, provide counts of those needing remediation, or estimate the total funding in the remedial system because—as valuable as these definitional and counting exercises would be—they are a fool's errands, conceptually impossible because of substantive disagreements about what literacy is and practically impossible because of the dearth of information. There is much we leave out, then, but the task of understanding remedial education and its link to vocational preparation is crucial and must begin.

A Note on Terminology

Throughout this report, we use the term "remedial education" to describe all efforts to increase the competencies of individuals whose proficiencies in such areas as reading, writing, oral communication, and mathematics are thought—by themselves or by others—to be inadequate. We, as well as many others, dislike the term remedial education because it connotes that the individuals in such programs are deficient or that their innate abilities are deficient. As we shall argue in greater detail in our third section, entitled "The Nature of Effective Programs: The Conventions and the Structure of Skills and Drills," the assumption of deficiency is one of the pernicious aspects of skills and drills.

Occasionally, there have been efforts to avoid the negative connotations of the term remediation. In part, for this reason, community colleges often use the term developmental education. Occasionally, there are efforts to give developmental education a more specific meaning; for example, Cross (1976) has argued that developmental education ought to be applied to efforts to "develop the diverse talents of students, whether academic or not" (p. 31), in contrast to remedial education which seeks to correct academic deficiencies. However, too often the term developmental education has simply become a substitute for remediation.

In this report, for lack of a better and well-accepted term, we use the term remedial education. However, as we argue in our third section and in our fifth section, which is entitled "Directions for Future Policy," the successful alternatives to skills and drills must find a way to replace the assumption of deficiency with methods that draw upon the real abilities of students.

The Organization of This Report

Although the purpose of remediation may seem obvious, the current furor over "basic skills" encompasses several strands and several conceptions. Such conceptual issues are important because programs designed to improve certain capacities—for example, the ability to do simple arithmetic or to understand the main point of a short reading passage—may be completely inappropriate for addressing other capacities such as interpersonal skills or the ability to make informed judgements. In the first section, entitled

"The Ambiguity of the Problem: The Nature of Basic Skills," we contrast the various critics to explore the ambiguity in what constitutes basic skills.

The second section, "The Current State of Remedial Efforts," presents information about remedial offerings within vocational education, JTPA, and welfare-to-work programs, drawing on our telephone questionnaires as well as on insights from our program visits. This section clarifies the type of remediation provided, as well as the coordination that now exists. These results also indicate the lack of information in the existing system—information on even basic elements such as enrollments, as well as more complex measures of outcomes.

The third section, "The Nature of Effective Programs: The Conventions of the Structure of Skills and Drills," then assesses the effectiveness of current remedial efforts. An extensive literature describes good practice in adult education and remediation based largely on experience. However, there prove to be few outcome evaluations of remedial programs, and many of these are based on inappropriate research designs. Furthermore, most evaluations pose the wrong question, asking only whether programs should be continued or terminated rather than asking how they might be improved. Given the lack of information, it is, therefore, necessary to examine the structure of existing programs to see whether they conform to common conventions about good practice. As a result, in this section we detail the assumptions underlying the dominant approach of skills and drills. Skills and drills proves to violate most conventions of good practice in adult education, and the logic of using methods for adults that have failed to teach them adequately in the K-12 system is baffling. In the absence of any positive evaluation evidence, then, there is a *prima facie* case that the pedagogical methods of most remedial programs are inappropriate.

Next, Section Four, "Alternatives to Skills and Drills," describes some alternatives to skills and drills to clarify that many methods are possible. We first characterize an approach which in many ways reverses the assumptions of skills and drills—one that we label "meaning-making." Next, we examine "eclectic" approaches, combining methods from different pedagogical traditions, and we examine for functional context literacy training to analyze how this approach differs from skills and drills. We then describe several other programs that integrate remediation with job skills training, including several which depart in important ways from skills and drills.

Finally, in the last section, entitled "Directions for Future Policy," we examine the implications of this investigation for future policy. Clearly, the demands for remediation will increase, and publicly funded programs appear to be proliferating. Questions about what ought to be done are, therefore, not academic: The current efforts involve large, though uncertain, sums of money; they enroll large, though unknown, numbers of people; yet there is little evidence that this activity makes much difference. In our view, public policy needs to confront two issues that have previously been ignored: the question of effectiveness, an issue which is familiar in most public debates but which has been strangely absent from discussions of remediation; and the issue of appropriate pedagogy, a subject which is unfamiliar in policy circles. Finally, given the disagreements over what remedial programs should try to accomplish—disagreements stemming in part from the ambiguity of what basic skills mean—it is necessary to confront the purposes of public programs.

This report is quite often critical of current practices in remedial education, and so a corrective is necessary. Most of the individuals we have interviewed are making strenuous efforts to grapple with difficult educational problems. Many teachers are dedicated to their students and have tried desperately, in as many ways as they know how, to find solutions to the low skill levels of their students. They face problems not of their own making—problems which originate, for example, in the failures of high schools, in the poverty which has gotten worse in the past decade, in the social and demographic changes that have made family life in big cities so chaotic, in the continuing (and probably worsening) discrimination against minority parents in labor markets and minority children in schools, and in the unavoidable adjustments of immigrants new to this country—without having any control over these causes. They are given the responsibility of helping individuals get back into the mainstream of economic life, but with scant and uncertain resources, relatively low salaries, and little guidance about appropriate practice. They face a task—providing basic education to individuals who have already completed up to twelve years of schooling, but who have still not mastered certain basic abilities—which is self-evidently difficult, and even in the estimation of some people impossible. If remedial programs are ineffective, it is not because the individuals running them are incompetent or lackadaisical. It is, in our view, because no one has grappled with the magnitude of the problem, the issue of appropriate resources, the need for evaluation at various stages, and the question of what pedagogies are appropriate; the "system" has developed haphazardly in response to the necessity posed by too many underprepared individuals with little sense of how it ought to

develop. The failures are those of public policy, not of the individuals who run the programs—and the solutions must, therefore, come from reform of public policy at every level.

THE AMBIGUITY OF THE PROBLEM: THE NATURE OF BASIC SKILLS[3]

In one sense, the nature of the problem confronting educational institutions and job training programs seems obvious. Widely cited reports from the National Assessment of Educational Progress (NAEP) indicate that only fifty-eight percent of thirteen-year olds and eighty-six percent of seventeen-year olds perform at the "intermediate" level of reading, while only eleven percent of thirteen-year olds and forty-two percent of seventeen-year olds perform at the "adept" level (Kirsch & Jungeblut, 1986). Typical complaints describe the problem as a lack of very simple skills in reading, writing, and arithmetic operations:

> The Department of Education estimates that there are about 27,000,000 adult Americans who can't really read. Almost all of them can sign their names and maybe spell out a headline. Most are totally illiterate in the way we used to define illiteracy. But they can't read the label on a medicine bottle. Or fill out a job application. Or write a report. Or read the instructions on the operation of a piece of equipment. Or the safety directions in a factory. Or a memo from the boss. Maybe they even have trouble reading addresses in order to work as a messenger or deliveryman. Certainly they can't work in an office. (Lacey, 1985, p. 10)

The consequences for business are often greater than for the individual's access to jobs. A joint report of the Departments of Education and Labor, pointedly entitled *The Bottom Line: Basic Skills in the Workplace* (1988), described one instance of the problem:

> In a major manufacturing company, one employee who didn't know how to read a ruler mismeasured yards of sheet steel, wasting almost $700 worth of material in one morning. This same company had just invested heavily in equipment to regulate inventories and production schedules. Unfortunately, the workers were unable to enter numbers accurately, which literally destroyed inventory records and resulted in production orders for the wrong products. Correcting the errors cost the company millions of dollars and wiped out any savings projected as a result of the new automation. (p. 12)

In an article in the December 19, 1988 issue of *Time* magazine, Christine Gorman reported that "the skill deficit has cost businesses and tax payers $20 billion in lost wages, profits, and productivity. For the first time in American history, employers face a proficiency gap in the work force so great that it threatens the well-being of hundreds of U.S. companies" (p. 56). These kinds of complaints suggest the need for the kinds of remedial programs that we see most often in adult education, community colleges, JTPA programs, and

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[3] The logic of this section is drawn in part from Hull and Cook-Gumperz (1990).

welfare-to-work programs: efforts focused on teaching reading comprehension of simple paragraphs, writing coherent paragraphs, and applying arithmetic skills such as fractions, decimals, and long division—all staples of the elementary school, and "basic" by almost any definition.

Not surprisingly, though, the conception of what is "basic" varies substantially. The report of the National Commission on Excellence in Education, *A Nation at Risk*—the report which in many ways ignited the reform efforts of the 1980s—identified the "New Basics" as four years of high school English, three years of math, three years of science, three years of social studies, and one-half year of computer science. The report then went on to specify the content of each area, outlining the need for capacities such as knowledge of "our literary heritage and how it enhances imagination and ethical understanding" (p. 25), geometry, algebra, elementary probability, and statistics—capacities well beyond simple arithmetic and reading for comprehension.

Other manifestoes define the problem somewhat differently, and identify still other capacities as "basic skills." A report of the American Society for Training and Development (Carnevale, Gainer & Meltzer, 1990), a group which sponsors training within firms, moves well beyond academic competencies in defining necessary skills:

> Reading, writing, and math deficiencies have been the first to surface in the workplace; but, increasingly, skills such as problem-solving, listening, negotiation, and knowing how to learn are being seen as essential. . . . [Employees] are less supervised, but they are frequently called upon to identify problems and make crucial decisions. (p. 2)

The report, *Workplace Basics: The Skills Employers Want*, identifies as "basic skills" such capacities as adaptability, the ability to innovate, strong interpersonal skills, the ability to work in teams, listening skills, the ability to set goals, creativity, and problem-solving skills (Carnevale, Gainer, & Meltzer, 1990, chap. 2). Others have echoed the claim that simple academic abilities are insufficient:

> Reading, writing, and arithmetic, however, are just the beginning. Today's jobs also require greater judgement on the part of workers. Clerks at Hartford's Travelers Insurance Company no longer just type endless claim forms and pass them along for approval by someone else. Instead they are expected to settle a growing number of minor claims on the spot with a few deft punches of the computer keyboard. Now, says Bob Feen, director of

> training at Travelers: "Entry-level clerks have to be capable of using information and making decisions." (Gorman, 1988, p. 57)

Still others have denied that any of these skills matter much, at least for the moment. The Commission on the Skills of the American Workforce surveyed a sample of firms, and only five percent reported that education and skill requirements are increasing. The Commission concluded that, with some exceptions, "the education and skill levels of American workers roughly match the demands of their jobs." Instead of deficiency in conventional skills, their sample identified a different area of deficiency (National Center on Education and the Economy (NCEE), 1990):

> While businesses everywhere complain about the quality of their applicants, few refer to the kinds of skills acquired in school. The primary concern of more than 80 percent of employers is finding workers with a good work ethic and appropriate social behavior—"reliable," "a good attitude," "a pleasant appearance," "a good personality." (p. 24)

The report went on, however, to forecast a "third industrial revolution," one which will "usher in new high performance work organizations that have higher skill requirements than exist today" (p. 56), and then it outlined the necessary capacities, including "foundation skills." These skills include the following:

> the demonstrated ability to read, write, compute, and perform at world-class levels in general school subjects (mathematics, physical and natural sciences, technology, history, geography, politics, economics and English). Students should also have exhibited a capacity to learn, think, work effectively alone and in groups and solve problems. (p. 69)

Like the "New Basics" of *A Nation at Risk*, this conception of "foundation skills" suggests the inadequacy of basic skills as conventionally defined for a world-class labor force, a point echoed by many others forecasting a continued increase in the skills necessary for the future workforce (e.g., see Johnston & Packer, 1987).

From these commission reports and manifestoes, then, comes an ambiguous definition of the problem. Whether basic skills should be defined as reading comprehension, simple writing abilities, and arithmetic computation, or as academic competencies usually associated with a college preparatory curriculum and restated in the "New Basics" and the "foundation skills" of more recent reports, is unclear. Whether the serious deficiencies in the labor force are those of simple academic competencies, "higher

order skills" such as problem solving, interpersonal skills such as the ability to work in teams, or behaviors lumped under the term "work ethic" is another subject of contention. Whether workers need more sophisticated academic skills, or whether employers really need judgement—a highly complex capacity that requires the ability to understand the multiple goals of an organization and balance competing demands—is similarly unclear. Whether the deficiencies in the labor force are present now, or whether the current labor force is adequate to the tasks demanded of it but not to those of a future and still imaginary organization of work, has also been the subject of some dispute. Something seems amiss in the labor force; however, what is wrong and how to fix it are ambiguous.

A second major ambiguity involves the focus of concern—the question of who is suffering because of deficient skills. From one perspective, skill deficiencies are a problem because they make it impossible for individuals to qualify for jobs necessary to make them self-sufficient; they may be able to work at unskilled jobs—*if* they can manage to complete application forms and get hired—but they can't aspire to much more. Even so, most reports that focus on skill deficiencies have shown little concern for the well-being of individuals. Instead, what is at stake is the competitive condition of the country; and the major beneficiaries of remedial efforts appear to be employers and then the American economic system.

Both of these concerns are highly vocational and utilitarian; that is, they emphasize the purpose of enhancing basic skills, or eradicating illiteracy, in terms of employment and productivity on the job. In contrast, another parallel discussion about literacy and illiteracy has stressed that the capacities associated with literacy—including the reading and writing abilities usually included among basic skills—are valuable beyond their vocational goals; their purposes include political uses for informed citizens, familial uses for parents educating their own children, the ability to participate actively in community and non-work organizations, aesthetic goals for those who read fiction and poetry, avocational pursuits, and various forms of self-improvement too numerous to catalogue and even to describe as purposeful.[4] From this perspective, narrowing the definition of literacy to those forms which are job-related—as many of the commission reports do when they concentrate on the skills necessary to build a world-class workforce, or as functional context literacy does

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[4] For some of the recent efforts to define literacy, or to specify what the purposes of literacy are, see Venezky, Wagner, and Ciliberti (1990); "Literacy in America" (1990); deCastell, Luke, and Egan (1986); Kintgen, Kroll, and Rose (1988); Graff (1986); and Gee (1989).

when it reduces literacy to those skills required in a specific work context (Kazemek, 1985)—is inappropriate, since individuals may seek to become literate for many different reasons (Fingeret, 1990).

In the context of institutions struggling to provide remedial education, these concerns may seem academic. Most community colleges are straining simply to keep up with the demands for remedial education and ESL, and most job training programs and welfare-to-work programs have found themselves without sufficient resources to provide very much basic skills instruction. In this situation, arguments about whether remediation and literacy programs ought to include more elements are simply pointless without additional resources. However, keeping the different conceptions of basic skills and literacy in mind helps interpret what programs are doing. For example, a program that relies heavily on individual computer-based instruction in reading and computation is quite different from one that uses a variety of reading, writing, and interactive activities to provide practice in interpersonal communication; what we will label the "skills and drills" approach to remediation has very different ambitions from the eclectic approaches sometimes developed in community colleges; and programs which link remediation to the requirements of particular jobs have advantages and disadvantages, compared to other programs, that are inseparable from their goals.

Most importantly, the current debates about basic skills and literacy, and the clarion calls to do something about the sorry state of the American labor force, cannot change federal and state policies without some decisions about the purpose of remedial efforts. To expand the nation's efforts in remediation, as many recent reports call for, it is necessary to specify what the scope of such efforts should be. Even if this is done by omission—by failing to specify the goals of remedial efforts, leaving that decision to local institutions—this still constitutes a decision about scope and purpose. When we return in the last section of this monograph to the questions of what ought to be done with the remedial programs that are part of vocational education and job training, the question of purpose will prove crucial.

THE CURRENT STATE OF REMEDIAL EFFORTS

While there has been a surge of writing about literacy and skill deficiencies, there have been almost no examinations of what programs are offered and what the relationships among them are.[5] To provide some initial information, we conducted telephone interviews with administrators of vocational education and job training programs and providers of remedial education in twenty-three regions located within nine states (see Appendix A). Eight states—California, Florida, Georgia, Illinois, Michigan, North Carolina, Tennessee, and Wisconsin—were chosen because of some feature of interest to this study. For example, several of them (California, Florida, and Michigan) have welfare-to-work programs that have been operating for some time; North Carolina has resource centers in its community colleges that we knew to be widely used by JTPA and welfare recipients; California has a large number of community colleges as well as a long-running welfare-to-work program. Tennessee has JTPA programs operated by community colleges, and also has a basic skills and adult education program at the state level that channels JTPA 8-percent funds to literacy programs; and Michigan and Wisconsin have relatively well-developed mechanisms of coordination. In addition, we interviewed programs in Hartford, Connecticut because that city has pooled all its education and training funds, providing a potentially interesting case of coordination. We had previously visited each of these states (except Connecticut) to examine coordination in their job skills training, so we were relatively familiar with state policies and institutional structures.

Within each state, we tried to choose one urban area, one rural region, and one suburban or semi-urban region; the regions where we conducted our interviews are typically cities or collections of neighboring counties.[6] We began each interview with the director of the JTPA Service Delivery Area, and then interviewed administrators in charge of remediation in any local community colleges, technical institutes, area vocational schools serving adults, adult education schools, and welfare-to-work programs. (We did not interview individuals associated with secondary vocational programs.) In each institution

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[5] For an attempt to survey adult education programs in California, see Solorzano, Stecher, and Perez (1989). There have been a few surveys of developmental education in community colleges; see, for example, Lederman, Ribaudo, and Ryzewic (1985); S. D. Roueche (1983); Boylan (1985); and Spann and Thompson (1986).

[6] Acute readers will note that we interviewed individuals in only two areas of California and Florida. In these states, the third region we chose seemed populated by individuals who did not return phone calls, and we ran out of time, steam, and patience.

that provided remedial education, we also interviewed the individual in charge of remediation—that is, the individual operating the learning lab or overseeing the teachers within the remedial programs, an individual who would be likely to know the curriculum and philosophy of the program. In Service Delivery Areas (SDAs) that provide remedial services through several different subcontractors, we interviewed one or two subcontractors; in community colleges that provide remediation within English and math departments, we interviewed the heads of those departments. Through this set of interviews we hoped to develop a comprehensive picture of remedial education within each region, including the patterns of referrals among programs; and we also gathered information about policies and funding—information administrators are likely to know—and about the programmatic details of curriculum, philosophy, and purpose.

The questions we asked covered descriptive aspects such as the numbers of individuals enrolled and the types of programs offered; funding; relationships among programs, including practices of referring individuals to or receiving students from other programs; the effects of state and federal policies; and a long list of questions designed to elicit as full a description of the programs' methods and curricula as possible. In addition, we asked for information about the numbers of individuals who enrolled and who completed any evaluation evidence, including pre- and posttests, and any follow-up information. The questionnaires we used are included in Appendix C.

In general, these questionnaires were too ambitious, and the information they elicited proved to be incomplete.[7] Many programs lack information about their own operations; many JTPA programs, for example, are unable to say how many individuals receive basic education because the decision to provide remediation is often left to subcontractors; many welfare-to-work programs were only barely underway, and had not yet developed information systems that allowed them to report what services individuals receive. Even simple figures such as enrollments are difficult to collect on a consistent basis since institutions establish different ways of counting individuals. This poses a

[7] The only other effort we know of to administer questionnaires to large numbers of providers is the survey of literacy programs in California by Solorzano, Stecher, and Perez (1989). Their responses seem relatively complete, but only because their questions were simplified to be relatively closed-ended—in contrast to the open-ended questions we tended to ask. In addition, their survey did not try to collect information about enrollments, completion, and effectiveness. In a talk with Brian Stecher, the individual in charge of the survey described the process of obtaining information as "painful," as it was for us, too. In general, we conclude that it is more informative to visit programs than to gather information by telephone or written survey methods.

serious problem for remediation in educational institutions because students may or may not receive credit or the courses themselves may be difficult to distinguish from college-level English or math. The time period of remediation programs, with many relatively short or operated as open-entry/open-exit programs in which students determine the amount of time they spend, creates yet other problems. Describing the curricula offered proved simple only in the cases where providers are using well-known curricula (e.g., the Comprehensive Competencies Program or the PLATO computer-based system). In other cases, it was difficult to tell what the curriculum was meant to be, though visits to selected programs (listed in Appendix B) provided information that helped interpret responses; most providers had a difficult time articulating their philosophy and methods.

Despite the incomplete responses to our questionnaires, unmistakable patterns emerged. We first describe remedial efforts for specific types of vocational education and job training programs, and we then draw together our results into three larger issues: coordination among programs, the nature of what is provided, and evidence about effectiveness.

Postsecondary Vocational Education: Community Colleges and Technical Institutes

Comprehensive community colleges and their specialized peers, technical institutes, have become some of the largest providers of remedial education.[8] The institutions have found their incoming students increasingly underprepared, particularly since the vast expansion of enrollments in the 1960s and 1970s, so they have added remedial programs to their more traditional vocational and academic offerings. Virtually every community college now offers some form of remediation;[9] estimates of the fraction of entering students

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[8] For general background on remediation in community colleges, see Cohen and Brawer (1989), chap. 8, and Ahrendt (1987). Although there may be differences between community colleges and technical institutes in their provision of remediation, we have been unable to learn much about such differences either from our telephone surveys or from the literature.

[9] For surveys of basic skills courses in both two- and four-year colleges, see Lederman, Ribaudo, and Ryzewic (1985), indicating eighty-two percent offer reading courses, ninety-one percent offer basic writing courses, and eighty-six percent offer basic math courses. Since these figures include all colleges, the figures for community colleges are certainly higher. Wright (1985) found that eighty-eight percent of two-year colleges offered some form of developmental education, and ninety-four percent offered support services such as learning assistance centers. By 1985, Boylan (1985) claimed that ninety-seven percent of two-year

in need of some form of basic instruction vary from twenty-five percent to fifty percent (Cahalan & Farris, 1986, Table 6; Plisko & Stern, 1985; Roueche, Baker, & Roueche, 1987) to seventy-eight percent in the Tennessee system (Riggs, Davis, & Wilson, 1990). Although there has been some resistance to remedial education, partly on the grounds that such programs compromise claims to being "colleges," most community colleges seem to have accepted the legitimacy of these offerings (Mickler & Chapel, 1989); many have expanded their offerings in response to greater numbers of very poorly prepared students from JTPA and welfare programs, as well as increasing numbers of foreign-born students in need of English as a Second Language (ESL).

The expansion of remedial education appears to have taken place as a result of local responses to need rather than as a result of state policies, since relatively few states have adopted specific policies for remediation.[10] However, virtually all states fund remedial education through state aid to community colleges and technical institutes—though a few establish limits on the number of remedial courses per student that receive state support—and many use their Perkins funds for remedial programs for vocational students. Receiving state aid on the basis of enrollment or attendance distinguishes community colleges from most other providers of remediation and creates a fiscal incentive for other programs—notably JTPA and welfare—to send their clients to community colleges.

All of the community colleges in our sample provided some form of remedial education, or "developmental education" as some individuals termed it. The estimates of the fraction of students enrolled in such programs varied from twelve percent to eighty-three percent, with two modes at about thirty-five percent and seventy percent. However, several administrators asserted that this question is difficult because the boundary between

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institutions he surveyed offered developmental education. A survey by the Department of Education found that eighty-eight percent of two-year colleges and seventy-eight percent of four-year colleges offered remediation in 1983-1984 (Cahalan & Ferris,1986). A forthcoming survey by the Department of Education found that ninety-one percent of community colleges offered remedial courses in 1989; see *College-Level Remediation in the Fall of 1989*, described in *Education Week*, May 22, 1991, p. 11.

[10] The RAND Corporation is currently conducting a survey of policies in fifty states for the National Center, and one question addressed to postsecondary policymakers is whether there is a state policy on remedial education. The vast majority of states have established no special policies, though California and Washington require community colleges to provide a full range of remedial courses, and several states (Connecticut, Florida, Georgia, Louisiana, New Mexico, New York, Oregon, and Texas) require that remediation be provided to all students who fail a standardized test. (Boylan, 1985, also reports that eleven states now require colleges to provide developmental education where a need for such programs has been identified.) Several states report considerable interest in developing more coherent policies or state task forces to develop such policies.

what is remedial and what is truly college-level is a matter of judgement. In addition, they claimed that conceptions of who is a "remedial student" vary from all those who are taking at least one remedial course to those enrolled in an entire remedial program. Community colleges provide remediation in several different ways: Some offer courses within English and math departments; some have established separate learning labs or centers where students can go for individualized instruction; and some have established remedial departments which may offer a variety of courses as well as learning labs, and even non-remedial English and writing courses in some institutions.[11]

Not surprisingly, offerings vary widely among community colleges. At one end of the spectrum, some colleges seem to offer only a learning lab equipped either with programmed or computer-based instruction, which students can use on their own initiative with relatively little guidance. However, the most ambitious community colleges offer a great deal more and provide good examples of the eclectic approach to instruction described in Section Four: They provide courses at different levels of difficulty, typically encompassing coursework below the fourth grade level; coursework ranging between the fourth and the eighth grade level; and coursework leading up to college-level competencies in reading, writing, and math, rather than offering only one or two of these subjects; they include labs in all three subjects, where students can work at their own pace under the guidance of instructors; in reading and writing courses, they distinguish between offerings for native speakers of English and those for non-native speakers, since the two groups have different learning needs; and they provide one-on-one tutoring. The best of the community college programs are quite varied in their offerings, then, especially compared to the other providers of remedial education.

Colleges also vary in whether they require developmental education of students who score below some standard or whether remediation is "strongly advised" but not required. There has been a shift toward requiring remediation (Boylan, 1985), since colleges have been under pressure to increase persistence; and eleven states now require mandatory placement in developmental education (Boylan, 1985). However, even with

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[11] In a national survey of college and university courses with a sixty-two percent response rate, twenty-five percent of institutions offered courses through English and math departments; thirty-seven percent had established a remedial center of some kind; and forty-three percent had established a developmental or academic skills department (Gruenberg, 1983). Both Cohen and Brawer (1989) and S. D. Roueche (1983) state that many of the most successful developmental programs are in academic departments, but the evidence for their claim is unclear.

such a requirement, students can usually enroll concurrently in other vocational and academic courses. Most of the institutions that we surveyed advised but did not require underprepared students to take developmental courses. Almost all institutions allowed concurrent enrollment in other courses. (There are exceptions, however; students in Tennessee scoring below college proficiency on the state's basic skills assessment must complete a remedial program before enrolling in courses that use skills which they lack.) As a result, low scores on standardized tests are only rarely a barrier to enrollment in vocational education in community colleges—contrary to the practice in many JTPA programs, for example, in which low scores prevent individuals from entering certain training programs.

Almost all of the community colleges we surveyed include either welfare or JTPA clients, most of them in the regular remedial programs rather than in special courses. In some states, including California and Florida, welfare-to-work programs have not been allocated funds for basic skills instruction, so welfare programs must send their clients either to adult education or community colleges. When welfare clients enroll in community colleges, the tracking requirements under the JOBS program entail extensive paperwork; therefore, community colleges know exactly how many welfare recipients they have in JOBS-sponsored programs. However, unless a community college has a subcontract with a SDA to provide remediation—something which happened in only two community colleges in our twenty-three regions, largely because JTPA avoids using its own resources for remediation—or has received an 8-percent grant for JTPA clients, the college is unlikely to know and has no need to know if a student is also a JTPA client; consequently, individuals referred by JTPA to community colleges for remediation may enroll, but neither the college nor JTPA knows that such a referral has been completed. As a result, many colleges report that they do not know how many JTPA clients they have, even in regions where the SDA reports that it refers individuals to the community college.

In most community colleges, remediation is relatively independent of both transfer education and vocational education. Remedial programs usually have lower status; they are more likely to be taught by part-time instructors than by regular full-time faculty; and they are likely to be seen as precursors to vocational and academic coursework, rather than as complements. In practice, this means that no community colleges in our sample have tried to coordinate remediation with vocational or academic programs. There has been, based on our survey, little attempt to develop "functional context training" in which the content of

remedial courses is somehow drawn from or linked with the content of vocational programs. While concurrent enrollment in both remedial and "regular" courses is widespread, and is widely reported to have advantages in keeping students motivated and enrolled, it does not mean that the content of remedial and vocational courses has been coordinated or integrated in any way. To be sure, there has been some discussion among instructors of the need to teach basic skills within the context of "regular" courses—usually courses in literature, the humanities, and the social sciences (Luvaas-Briggs, 1983; Bojar, 1982; McGlinn, 1988; Baker, 1982; and for four-year colleges, Ganschow, 1983). In addition, our site visits identified a few efforts to use vocational material in remedial courses. By and large, however, developmental education efforts in community colleges remain independent of the transfer and vocational programs for which they presumably prepare their students.

Because community college funding is enrollment-driven, community colleges can generally provide good information on how many students are enrolled in their remedial programs. However, other evidence is spotty. Data on the proportion of students starting remediation who complete different stages or who then go on to complete certificates or Associate programs is also very limited, though administrators estimated that between ten percent and fifty-nine percent of students complete remedial courses. Administrators often report that they have evaluation evidence, usually in the form of pre- and posttests; nevertheless, while they may use such information for evaluating the progress of individual students, it is much rarer to see such information used to evaluate the effects of courses or programs. Of the institutions we contacted, several sent us enrollment figures, but only one sent an evaluation of any kind—an analysis of retention rates of students in developmental education.

In the literature on developmental education, there are relatively few evaluations; indeed, complaints about the lack of evaluation evidence are staples of prior examinations (J. E. Roueche, 1968; Cross, 1976; Roueche & Snow, 1977; J. E. Roueche, 1983; Cohen & Brawer, 1989). A meta-analysis of college programs for high-risk and disadvantaged students through the early 1980s (Kulik, Kulik, & Shwalb, 1983) located only nine evaluations of remedial or developmental programs, of which six were for community colleges and none of which was published more recently than 1971. While the analysis found that these programs have positive effects on the average, community college programs and remedial programs have lower effects and usually statistically insignificant

effects on both grade point average and persistence. More recently, one can find summaries that claim positive outcomes—such as the claim that "well-designed programs that are challenging and motivating but not overwhelming produce positive results far beyond the expectations of the instructors" (Mickler & Chapel, 1989, p. 3)—as well as relentlessly gloomy interpretations. A few states have carried out substantial evaluations of their programs, notably California, where a consortium has identified colleges with adequate evaluation information and compiled evidence showing test score gains of students in remedial courses (Learning Assessment and Retention Consortium (LARC), 1988a, 1988b, 1989a, 1989b); and New Jersey, whose results focus on attrition rather than test scores (Wepner, 1987; Morante, Faskow, & Menditto 1984). The results indicate that community college students who passed remedial courses had an attrition rate from one semester to the next of thirteen percent, compared to an attrition rate of forty-two percent for those judged in need of remediation who did not complete courses, twenty-seven percent among those in need of remediation who never enrolled in such courses, and twenty-one percent for those judged not in need of remediation—suggesting that completing remediation among those in need of it sharply reduces attrition. However, while the results from New Jersey and California are generally positive, they may not be representative of all developmental programs,[12] and the underlying methodologies are weak (for reasons that will be explored later in this section).

The most thorough evaluations have taken place in Miami-Dade Community College, with its relatively sophisticated institutional research office.[13] Some results (e.g., Losak & Morris, 1983) suggest that completion of developmental courses has made little difference to student success. However, the extensive results in Losak and Morris (1985), reproduced in Tables 1 and 2, are more positive. These tables provide richer information than most other evaluations because they describe outcomes such as persistence and CLAST (College Level Academic Skills Test) scores (scores from a "rising junior" exam which students must pass to transfer from two-year to four-year colleges in Florida) which are more meaningful than changes in standardized test scores. In addition, they allow comparisons among different groups of students. The data in these tables also allow

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[12] A common finding is that studies with positive results are published; those with negative or inconsistent conclusions are less likely to be published. The California results are based only on those colleges that have adequate evaluation results available, and those are likely to be the most self-consciously outcome-oriented programs.

[13] Many of the papers on remediation from the Office of Institutional Research have been collected in two volumes, "Collection of Papers Related to the Academically Underprepared Student," by John Losak.

Table 1

Three-Year Persistence Rates
(Graduated or Re-Enrolled)
For Tested First-Time-in-College Students
Who Entered Fall Term 1982
Miami-Dade Community College

Successfully Completed Remedial Courses in the Following:

Below Placement Score		No Area		One Area		Two Areas		Three Areas	
No Area	N=	2021							
(N=2021)	Graduated	533	26%						
	Still Enrolled	430	21%						
	Total	963	**47%**						
One Area	N=	873		651					
(N=1524)	Graduated	95	11%	136	21%				
	Still Enrolled	149	17%	164	25%				
	Total	244	28%	300	**46%**				
Two Areas	N=	530		509		321			
(N=1360)	Graduated	25	5%	56	11%	49	15%		
	Still Enrolled	47	9%	130	26%	104	33%		
	Total	72	14%	186	37%	153	**48%**		
Three Areas	N=	641		357		303		156	
(N=1457)	Graduated	7	1%	12	4%	24	8%	14	9%
	Still Enrolled	56	9%	69	19%	89	29%	58	37%
	Total	63	10%	81	23%	113	37%	72	**46%**

Source: Losak and Morris (1985), Table 1.

Table 2

Passing Rates for 1984-1985 CLAST Examinees Related to Placement Test Results and College Preparatory Success Miami-Dade Community College

Successfully Completed Remedial Courses in the Following:

Below Placement Score		No Area		One Area		Two Areas		Three Areas	
No Area	N=	1091							
	Passed All	1031	95%						
	Passed 3 or 4	1090	**99%**						
One Area	N=	336		276					
	Passed All	271	81%	232	84%				
	Passed 3 or 4	324	96%	266	**96%**				
Two Areas	N=	163		113		79			
	Passed All	86	53%	67	59%	51	64%		
	Passed 3 or 4	133	82%	100	88%	72	**91%**		
Three Areas	N=	108		62		44		27	
	Passed All	32	30%	23	37%	16	36%	14	52%
	Passed 3 or 4	61	56%	38	61%	37	84%	22	**81%**

Source: Losak and Morris (1985), Table 3.

calculation of rates at which students remedy deficiencies; for example, forty-two percent (=651/1524) of students below a college-level score in one area completed remediation in that area, but only twenty-four percent of those deficient in two areas and eleven percent of those deficient in three areas completed remediation in all subjects. The results indicate that for students found to need remediation, completing more developmental courses improved retention and CLAST scores; but that completing such developmental courses did not eliminate the differences between students entering with deficiencies and those not needing any remediation.[14] That is, developmental education can narrow the differences among students, but it cannot eliminate them—at least not as it is currently practiced at Miami-Dade. Furthermore, completing remedial courses obviously requires substantial time and effort, especially for individuals who need to take such courses in two or three subjects, and so large fractions of students entering with scores below college-level never complete the appropriate remedial sequence.

There is, then, relatively little evidence about the effects of remediation in community colleges despite its growth over the last two to three decades. Although the evidence that exists is positive, particularly the findings from Miami-Dade, it probably describes the best institutions rather than the average practice, and is still subject to methodological flaws.

Adult Basic Education

A large system of adult education in this country provides various offerings for remediation—from ABE, GED, and ESL courses to citizenship training, hobby courses, and various self-improvement courses. The institutional sponsorship of adult education is bewildering: In most states, school districts have responsibility, though typically districts can choose whether or not to provide adult education. In some states (e.g., California), both school districts and area vocational schools provide adult education; in others (e.g.,

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[14] Along the diagonal in each table are the figures for those who have entered with no deficiencies, and those who have entered with deficiencies in one, two, or three areas but have completed remedial courses in these areas. From Table 1, the total persistence rates for these four groups are the same (forty-seven percent, forty-six percent, forty-eight percent, and forty-six percent), but the graduation rates vary monotonically with the amount of remediation necessary (twenty-six percent, twenty-one percent, fifteen percent, and nine percent), a pattern which appears again in Table 2 for CLAST test results.

Illinois), adult education is the responsibility of community colleges. In a few cases, there has been a division of labor; for example, in Florida, school districts provide adult education in fourteen counties, and they provide community colleges in the remaining fourteen. Adult education is generally funded by state aid per person enrolled, and so—like community college programs—is an inviting target for JTPA and welfare programs seeking remediation at someone else's expense.

ABE programs have the distinct advantage of being ubiquitous: There are ABE programs in every community in which we interviewed. Programs such as JTPA and many state welfare-to-work efforts lack funding specifically for basic skills. Moreover, these programs do not see themselves as educators and do not want the responsibility of developing educational curricula. Therefore, ABE programs are the most obvious places to send clients in need of remediation, partly because of funding but also because JTPA and welfare programs are also under substantial pressure to use existing resources to avoid duplication of services. As a result, in the majority of communities we surveyed, both programs refer clients to ABE when they fall below specific scores on standardized tests. For example, JTPA programs often establish minimum test scores for entry into certain job skill programs; clients with lower test scores are referred to ABE programs, presumably allowing them to increase their scores and then gain admission to training.

Within adult education, a common practice is to offer GED classes, as well as courses at a lower level of difficulty (often labeled ABE or pre-GED), designed to prepare students for GED classes. ABE classes are equivalent to work roughly between the fourth and eighth grade levels, while GED classes cover material roughly equivalent to grades six or seven to ten.[15] Most ABE and GED courses cover reading comprehension and arithmetic computation, but incorporate little writing; compared to community college developmental education, their range is quite restricted. Most ABE operate as open-entrance/open-exit programs, using texts or programmed workbooks which students can follow at their own pace, or (rarely, because of the lack of funds) using computer-based programs. Overwhelmingly, program directors described curricula as individualized and

[15] The practice of translating tests and programs into grade equivalents is widespread, so we will follow this method of describing programs. This practice reflects the origin of adult education in the elementary-secondary school system, with school standards and criteria still used for adults. However, many have objected to the use of grade equivalents, particularly for adult students who may be quite sophisticated in some areas while their test scores are still relatively low; see Sticht (1987), Taggart (1986), Mikulecky (1983), Long (1983), Balmuth (1985), Tomlinson (1989), and Harman (1985).

self-paced. "Individualized" means that programs ascertain an individual's level of performance through a standard test—often the Test of Adult Basic Education (TABE) or the Adult Basic Living Exam (ABLE)—and then start each student at the appropriate level in reading and math. The role of instructors appears to vary greatly. They tend to have little training in adult or remedial education, and they are almost all part-time (e.g., see Balmuth, 1985, and Darkenwald, 1986); since the instructional materials are designed to allow students to progress on their own, teachers need do little other than respond to occasional questions. However, a few ABE directors in our sample mentioned that they develop alternative curriculum materials to vary the format and media of the curriculum and to incorporate some writing and some group discussions into their programs. We suspect, then, that instructors vary enormously, from being relatively passive managers of prepackaged curriculum materials to being more active in devising their own approaches.

Uniformly, the ABE programs we interviewed lack information about completion rates. However, there is a general consensus that completion is very low; figures of fifty percent were commonly cited by the programs in our sample. ABE literature supports these figures, too (e.g., the review by Balmuth, 1985). Because of the lack of records, any figures on completion are simply guesses. What emerges consistently is an image of lackadaisical attendance in ABE: Directors describe many participants as attending sporadically, sometimes over long periods of time, and making slow and uncertain progress.[16]

One goal common to most adult education programs—evident in the structure of pre-GED and GED classes—is to have students pass the GED exam, to have their high school equivalency. In turn, many JTPA and welfare programs have taken GED completion as their goals, and so the GED appears to drive a great deal of existing remediation. Unfortunately, the evidence that completing a GED enhances employment or access to postsecondary education is weak. A number of adult educators we interviewed expressed that a GED "is only the first step," or is not enough to get worthwhile jobs. The literature examining the effects of the GED—scattered, often of low quality, and in great need of synthesis—suggests that the GED may provide a small advantage to those that

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[16] See also the surveys by Balmuth (1988) and Darkenwald (1986) on chronic absenteeism, irregular attendance, and dropout. The survey of adult education directors by Holmes, McQuaid, and Walker (1987) found that the second greatest barrier to comprehensive literacy instruction—second only to lack of money—is the low motivation among ABE students.

complete it, but that this advantage might be attributed to motivation, prior preparation, or other personal characteristics that distinguish GED completers from high school dropouts (Passmore, 1987; Olsen, 1989; Quinn & Haberman, 1986). Given the enormous influence of the GED on the goals and methods of adult education, it is disconcerting to find so little support for its effectiveness.

We were unable to collect any evaluation evidence from the programs we interviewed. As in many community colleges, some ABE programs claim to perform evaluations using pre- and posttests, but they use tests for individual assessment rather than program evaluation. Just as none collect systematic information about rates of progress and noncompletion, none collect information about the subsequent experiences of their participants. The fraction of participants who go on to complete a GED or other high school diploma equivalent,[17] the fraction who gain access to vocational training, the fraction among those referred by JTPA or welfare who subsequently enter training and find employment—these and other obvious measures of success are completely lacking. Nor could we find much evaluation evidence in the literature to supplement the information we received from our questionnaires.[18] While a few studies find positive results, most of them are seriously flawed.[19] Even those studies with positive outcomes acknowledge that gains are small. For example, Diekhoff (1988) claims that "there is little doubt that the average literacy program participant achieves a statistically significant improvement in reading skill" (p. 625), citing a 1974 study for the Office of Education that documented a half grade reading gain over a four month period. But given the limited amount of time most adults spend in ABE, with only twenty percent enrolling for longer than one year,

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[17] One source of information about GED completion is Jungeblut and Kirsch (1986), who reported that 39.6 percent of those who studied for a GED received one. However, these results are retrospective self-reports and must be interpreted with caution.

[18] See, for example, Balmuth (1985, 1988), Darkenwald (1986), Kazemek (1988), and Sticht (1988). In the exhaustive literature review by Solorzano, Stecher, and Perez (1989), there are no outcome evaluations despite their attempt to collect them. An evaluation of federally funded programs is now being undertaken by Development Associates, Arlington, Virginia, sponsored by the U.S. Department of Education, but it will collect only limited information on pre- and posttests from a sample of programs.

[19] For a review with some positive findings, see Mahaffy (1983); however, most of the studies he cites have obvious validity problems because they depend on opinion surveys of ABE administrators. Darkenwald (1986) cites a study by Kent examining pre- and posttests over a five month period, with an average gain of 0.5 grade levels in reading and 0.3 grade levels in math (p. 7); another result, from an MDTA program, found increases of 0.4 grade levels after fifty-four hours of instruction. Paltry as they are, these gains are likely to be due to selection effects, regression to the mean, practice effects, and other artifacts.

most ABE students will improve by one year or less, and their gains—from a fifth to a sixth grade reading level, for example—are trivial in practical terms. As he concludes,

> Adult literacy programs have failed to produce life-changing improvements in reading ability that are often suggested by published evaluations of these programs. It is true that a handful of adults do make substantial meaningful improvements, but the average participant gains only one or two reading grade levels and is still functionally illiterate by almost any standard when he or she leaves training. But published literacy program evaluations often ignore this fact. Instead of providing needed constructive criticism, these evaluations often read like funding proposals or public relations releases. (p. 629)

The general tenor of writing is discouraging, acknowledging the low levels of motivation, high dropout rates, and the lack of any but the most infrequent and anecdotal success stories. This literature generally confirms the information from our surveys—of a large, unwieldy set of programs, with varied institutional sponsorship and content, lacking any systematic information about enrollments, completion, progress, or success.

The Job Training Partnership Act

The Job Training Partnership Act (JTPA) allows local programs great discretion in the services provided to eligible individuals, and it allows basic or remedial education either by itself or in combination with occupational skills training (NCEP, 1987). However, most local SDAs have chosen to concentrate on providing classroom-based skills training provided by community-based organizations (CBOs) and educational institutions, on-the-job training provided by firms, and job search assistance. While it is impossible to ascertain at the national level how much of JTPA's resources support remediation, basic education does not figure prominently in most discussions of JTPA,[20] and prior studies have found relatively few SDAs providing any remediation.[21] In our prior observations of

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[20] See, for example, the overview of JTPA in National Center for Employment Policy (NCEP) (1987), which includes almost nothing about basic skills. One reason that it is impossible to learn anything about the magnitude of basic skills within JTPA is that, for reporting purposes, basic education and classroom-based occupational skills training are lumped together into classroom training.

[21] A study of the quality of training in JTPA (Kogan, Dickinson, Means, & Strong, 1989) examined the services in fifteen representative SDAs. While they found that thirteen out of twenty-two classroom-based programs included some basic skills, only two of the thirteen devoted at least twenty percent of class time to basic education. Only three programs included any basic education in the same classes in which occupational skills were taught.

JTPA programs (Grubb et al., 1989; Grubb et al., 1990), it became clear that JTPA performance standards have discouraged basic skills for two different reasons. Remediation increases costs, and, therefore, has made it more difficult for programs to meet the cost-per-placement standard (a standard which has recently been abolished). In addition, several administrators claim that JTPA clients are more likely to drop out during remediation because they find it boring, irrelevant to their job goals, and too reminiscent of the schooling in which they have previously failed—and dropouts for any reason make it difficult to meet placement standards. At the same time, many administrators acknowledge the need for more remediation, and some are trying to find new resources to support more instruction in basic skills.

In our sample of SDAs, virtually all offer some remediation. Most SDAs did not know precisely how many clients received basic education, however, because this decision is often left to subcontractors and is not reported to the SDA. Several programs that did hazard guesses estimated that around fifteen percent of their clients received some form of remediation.[22] Most commonly, an SDA will subcontract with various agencies, and some will provide basic skills instruction along with vocational skill training—in short-term secretarial and clerical programs, for example. When this happens, it is difficult to determine what the balance of remediation and job skills training is or what approaches are used in the remediation component because these decisions are left to subcontractors. In only a few cases did SDAs report that they had established a policy to guide subcontractors in their provision of basic skills. When a policy exists, it is usually limited to increasing client test scores by only a few grade levels. It is also common to provide remediation only to those who can prepare for the GED with a minimal brush-up (a month or two); clients with low tests scores may be supported for four to six weeks—clearly not enough to reach any minimum competency level—or, much more likely, they may be referred to an ABE or volunteer literacy program. Some JTPA programs match remediation to the client's employment goal; for example, an individual interested in office occupations may be encouraged to complete a GED, while those in janitorial programs will be encouraged to reach a seventh grade reading level. However, explicit policies about remediation are

[22] The frequency with which the fifteen percent figure came up is suspicious. Since many administrators have absolutely no information with which they could construct even an estimate, we interpret a figure like fifteen percent to mean that a small but non-trivial number of individuals receive remediation.

relatively rare, and SDA administrators were generally unfamiliar with the remedial programs offered by subcontractors.[23]

In a few instances, however, SDAs have established clear expectations about basic skills. Both the San Diego Private Industry Council (PIC) and the San Francisco PIC have declared that all providers of training should also incorporate basic skills instruction as appropriate, either by providing such instruction directly or by referring individuals to other agencies. Typically this is accomplished by dividing the day, for example with skill training provided in the morning and remediation in the afternoon and with no necessary relationship between the two components (though the San Diego SDA supports several organizations that do integrate remediation with vocational skills training in more meaningful ways). The policies of these two PICs are clearly exceptions, at least within our sample, though their decisions are consistent with the drift of federal policy to emphasize more remediation.

Less commonly, SDAs will subcontract with an agency (including various educational institutions) to provide remediation only. For example, the community colleges in San Diego and Danville, Illinois, have contracts to provide remediation for JTPA clients. The Berrier-Cass-Van Buren SDA in Michigan has just started contracts with several CBOs to offer basic education and employability skills based on the competency-based Comprehensive Adult Student Assessment System (CASAS); they were expecting the average duration in these programs to be about four weeks. Contracts specifically for remedial education are more common in youth programs within JTPA, for which mastery of academic competencies is an acceptable outcome. In most adult programs, however, the emphasis remains on job skills training and work experience.

The most common approach of JTPA programs is to refer individuals to other remedial programs. Based on an initial assessment, an SDA may suggest that an individual enroll in a remedial program concurrently with job skills training. The initial assessment may also be used as a barrier to some types of training and as a possible source of

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[23] Indeed, SDA administrators have no need to know what a subcontractor does. As long as an agency enrolls sufficient numbers of people and fulfills the terms of its subcontract (if it has a performance-based contract), then what the agency does to train and place clients is immaterial to the SDA.

"creaming"[24]: Certain training programs have minimum scores necessary for enrollment, and individuals with low scores are then referred to ABE or GED programs in the hopes that they can increase their scores and later gain admission to job training. North Carolina has extended this practice statewide: A seventh grade reading level is necessary to enroll in JTPA, and all individuals below this level are referred to ABE programs.

In referring JTPA clients to other programs, there appears to be a preference for sending individuals to ABE programs rather than community colleges. The timing of ABE programs—which often take place in the evening and which are typically open-entry/open exit—may be more appropriate for individuals who are in job skills training during the day. In addition, community college developmental education in some areas does not offer remediation at a low enough level for many JTPA clients. The tuition charged by community colleges may also be a barrier. However, in states where community colleges have established special remedial centers—as in North Carolina's Human Resource Development Centers or Wisconsin's special learning centers—then JTPA and welfare-to-work programs appear to refer more clients to community colleges.

The most obvious problem with referral is few SDAs have developed mechanisms to follow individuals whom they refer to other programs. Therefore, SDA officials never know whether someone they refer elsewhere enrolled in that program, whether they completed it, or whether they made it back into job skills training.[25] The mechanism of referral may seem like an appropriate form of cooperation among education and job training programs, but it is just as likely to exclude individuals from training and cause them to be "lost" among programs.

Finally, a substantial, though unknown, fraction of JTPA 8-percent funds are used for remediation. These funds, which are designed "to facilitate coordination of education and training services" (Section 123, Job Training Partnership Act), are often allocated

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[24] JTPA has consistently been charged by critics with creaming, or accepting only the most able and most experienced individuals eligible; just as consistently, program administrators have responded that since all those eligible are in desperate need of services, the charge of creaming is absurd. For some evidence that creaming has taken place, see GAO (1989).

[25] However, the Kalamazoo-St. Joseph's County SDA in Michigan does track its clients. All individuals draw up an employability development plan before they are referred to ABE, and a JTPA counselor checks on their progress in ABE; individuals can also co-enroll in ABE and on-the-job training rather than being kept out of training if they have low test scores. However, this tracking mechanism appears to be an exception.

through departments of education, following state priorities. In many cases these priorities include remediation; for example, Georgia recommends that 8-percent funds support remediation, GED programs, and support services for JTPA clients in technical institutes; Massachusetts has used its funds for a program called Workplace Education, providing ABE, GED, and ESL instruction through employers; Michigan uses its 8-percent funds for the Summer Training and Education Program (STEP), providing basic skills to in-school youth, and for literacy and basic education provided by local agencies; Illinois allows remediation as an option for 8-percent funds, and several SDAs use all their resources for basic education; Tennessee has allocated half of its funds to the State Department of Education for statewide literacy programs; Washington has recommended that 8-percent programs emphasize basic educational skills and workplace literacy; and California has established, as one of two priorities, programs that combine basic skills and vocational skills. In addition, several states (including California) have allocated some of their 8-percent funds specifically for welfare recipients, and these resources are also likely to find their way into remediation. The 8-percent funds are generally viewed within JTPA as relatively unconstrained resources—meaning, in particular, that they are not subject to performance standards—and have, therefore, been widely used in novel or experimental programs, or those including hard-to-serve groups. As a result, many remedial programs have at least a little 8-percent money supporting them.

The remediation funded by JTPA follows a consistent pattern. Because JTPA funds relatively short programs—rarely longer than twenty weeks and often less than half that—there is constant pressure to achieve gains in short periods of time; programs will therefore report gains (usually in grade-equivalent scores) per one hundred hours of instruction. Second, there is a distinct preference within JTPA for self-contained remedial programs—that is, programs that have curriculum materials (including teacher aides) already developed that can be implemented without a great deal of time for teacher preparation, curriculum development, or the participation of skilled educators—including computer-based programs such as the PLATO system and IBM's Principles of the Alphabet Literacy System (PALS), sometimes referred to as "turn-key" systems. JTPA administrators often distinguish themselves from educators, claiming to be job-oriented and performance-driven rather than academic and enrollment-driven. This distinction leaves some of them uncomfortable with developing educational programs; a typical comment about the decision to refer clients to ABE programs is that "we'll leave that to the educators." Finally, with the exception of some programs incorporating employability

skills and several innovative programs described in our "Alternatives to Skills and Drills" section, the vast majority of remediation provided within JTPA has not been modified to incorporate occupationally oriented material or to integrate knowledge required in job skills training. Almost all of it follows the model we label "skills and drills." Unfortunately, the limits of skills and drills are especially obvious within JTPA, which includes many high school dropouts and others who have not done well in conventional schooling; several administrators volunteered that remedial programs are boring and demeaning to their clients, and that some JTPA clients score poorly on standardized tests and drop out despite being able to read relatively well.

As in every other area of remediation, there are no evaluation results about the effects of basic skills within JTPA on other outcomes such as completion of job skills training, placement, or subsequent earnings. Even though SDAs must compile information on performance standards, these data are used for compliance but not for evaluation purposes; as a result, no JTPA program in our sample could provide evidence about the effectiveness of remediation. More general evaluation evidence about the effects of JTPA will begin to come out only when the National JTPA Study is completed, in 1992 (Gueron, Orr, & Bloom, 1988).

Two other recent evaluations of JTPA-related programs are tantalizing, though far from conclusive. One study examined the JOBSTART demonstration programs, which offer comprehensive services to disadvantaged high school dropouts (Auspos, Cave, Doolittle, & Hoerz, 1989). The evaluation differentiated those programs offering both remediation and job skills training concurrently, those offering remediation before job skills training (sequentially), and those providing remediation and referring their clients elsewhere for occupational skills training. The preliminary results indicate that those in JOBSTART received more education and training, and were more likely to receive a GED,[26] compared to control groups, but results about the effects of different patterns of education and training have yet to appear. A second study, an evaluation of the Minority Female Single Parent Demonstration, examined four programs designed to help low-income single mothers move from welfare to employment (Burghardt & Gordon, 1990). Three of the programs had no significant effects, compared to control groups; the one with

[26] The education component in JOBSTART stressed GED preparation, so the increase in GED completion is not surprising. From the description in Auspos et al. (1989), most of the JOBSTART education

a significant influence in increasing employment rates and earnings—the Center for Employment Training (CET), based in San Jose and described in greater detail in our "Alternatives to Skills and Drills" section—is a CBO that integrates basic skill training with job skill training. The authors of the evaluation concluded that programs which integrate remediation and skills training are more effective than those that provide the same services in a non-integrated fashion. Appealing as this conclusion is, the contention that integration explains the effectiveness of CET—rather than any other differences among the programs—cannot be supported by this kind of research.[27] In any event, the kind of linkage between remediation and job skills training in the experimental programs evaluated by these two reports is quite different from the general practice in our sample of SDAs, in which relatively few programs provide any basic skills training and largely refer their clients to ABE programs.

Welfare-to-Work Programs

The Family Support Act of 1988 established the Job Opportunities and Basic Skills (JOBS) program, which requires states to establish welfare-to-work programs and to compel some welfare recipients to participate. A wide range of services can be provided, including vocational training, basic or remedial education, postsecondary education, job search assistance, work experience, on-the-job training, and support services such as child care. In theory, the JOBS program could be used to provide a rich array of services to welfare recipients—a rebirth of the "services strategy" of the 1960s. However, many of the experimental welfare-to-work programs established during the 1980s provided paltry amounts of education and training,[28] and our previous investigations confirmed that many

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components seemed to follow a skills and drills approach, with the possible exception of the Dallas site and CET in San Jose.

[27] Other possibilities are that the effects of CET can be explained by the greater amount of job training provided; by the nature of the instructors, who are virtually all Hispanic and bilingual with a predominance of Hispanic clients; by the close connections with local industries; by the fact that many CET classes perform real work—operating the cafeteria, running a child care center, and operating a print shop, for example—rather than merely providing training in work; or by any of a number of other characteristics which would require more extensive field work to detect.

[28] For example, the GAO (1987) found that while eighty-four percent of these programs claimed to offer vocational skills training and seventy-two percent offered postsecondary education, only 3.2 percent of the participants received any remedial education, 2.3 percent received job skills training, and 1.6 percent were enrolled in postsecondary education (p. 69). For corroboration of the low levels of education provided, see Figueroa and Silvanik (1989).

states have not appropriated enough money to provide much education or job training (Grubb et al., 1990). The major services in most welfare-to-work programs are short-term job search assistance and counseling.

Our survey of remediation practices confirmed the lack of resources in most welfare-to-work programs. Almost universally, local administrators began planning jobs by convening all providers of education and training in the area, and then used existing providers for specific services—especially JTPA for job skills training and adult education for remediation (Grubb et al., 1990). For remedial education, the dominant practice is to provide an initial assessment—usually with a conventional test of academic skills like the Test of Adult Basic Education (TABE) or, particularly in California, with CASAS, a test which includes employability skills as well as conventional reading and math competencies—and then to refer individuals who have low scores to existing ABE and GED programs and individuals who are not native speakers of English to ESL programs. Quite often this is a matter of state policy: Florida does not provide funding for basic skills through the JOBS program, but relies instead on state funding of ABE through adult schools and community colleges; Georgia has decided to use JOBS funds only for support services and to rely on JTPA and ABE for education and training; Illinois similarly uses Project Chance funds to pay for support services, with community colleges providing education and training from special funds that the Community College Board and the State Board of Education supply; and California has required that adult schools and community colleges provide services to welfare recipients, though local programs are generally free to use their funds as they want.[29] In addition, as mentioned above, many states use large amounts of their JTPA 8-percent funds to support remedial programs for welfare recipients, so again welfare-to-work programs need not use their own resources.

In some instances, welfare-to-work programs have contracted with community colleges to provide remediation for groups of welfare recipients who enroll in the regular developmental education programs of the college but who may have received special tutoring and counseling as well.[30] This mechanism provides welfare recipients with a

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[29] Community colleges in California are under a "cap" or limitation on the enrollment of students who qualify for state aid; however, this cap does not apply to Greater Avenue for Independence (GAIN) participants, thereby providing a funding mechanism for welfare recipients to attend community colleges.

[30] Such a contract is also necessary because the tracking requirements of JOBS impose additional reporting requirements and expenses for the colleges.

wider array of remedial courses than most adult schools provide. In addition, welfare recipients can claim to be going to college rather than remedial education; the atmosphere is less like the dreaded high school; and presence at a community college allows them to see the other offerings available. Finally, we have come across some remarkably innovative approaches in the JOBS program. For example, some programs use a mechanism of individual referral, allowing welfare recipients to attend virtually any education or training program in the area (including community colleges, four-year colleges, and proprietary schools), using caseworkers to guide individuals through the maze of possibilities. Fresno City College in California enrolls about five hundred and fifty Greater Avenues for Independence (GAIN) recipients in the developmental programs of the college, providing them with additional tutoring and guidance; welfare workers have also located an office on the campus so that problems with eligibility, necessary information, and lost checks can be resolved without missing classes. However, these are admittedly rare; the typical welfare-to-work program provides assessment, referral to an ABE program for remedial education for those with low scores, and very short-term job search assistance, with education and job skills training relatively uncommon.

One important characteristic of the welfare system is that JOBS participants are assigned caseworkers who are responsible for monitoring progress. In addition, extensive reporting requirements allow programs to track clients. Therefore, the problem of losing track of individuals referred elsewhere, so prevalent in JTPA, should be less serious for welfare recipients. However, this is not necessarily the case: Many welfare programs in our sample are so new that their management information systems are not yet operating, and data on how many individuals have received various services is not available. In addition, there is a surprising tendency for individuals to become lost in the complex system. In California, for example, whose GAIN program has been running longer than almost any other, fourteen percent of single-parent families required to participate received basic education; ten percent received self-initiated education or training; ten percent received job search assistance; one percent received other education and training; and one percent received work experience—but twenty-nine percent did not attend an initial orientation, and thirty-seven percent did not participate in any service at all, largely for lack of follow-up or for being "deferred." Of the thirty-four percent who participated in an initial service (basic education, job search, or self-initiated education and training), ninety-one percent did not make it to the next stage of assessment (Riccio, Golden, Hamilton, Martinson, & Orenstein, 1989, Figure 2). Since large numbers of even mandatory participants are lost in

the system or have dropped out, the ideal behind the caseworker model—that individuals have a supportive guide through the possible services they might receive—is in practice undermined. As one GAIN administrator in California commented, the lack of information about progress means that many clients "fall into the black hole of ABE," staying in ABE for long periods of time without much progress and without caseworkers knowing whether they have completed or not.

The dominant practice is to refer individuals to adult education or, less often, to community colleges, and these programs are typically not integrated with job skills training. As a result, remedial education for welfare recipients is rarely coordinated with job skills training. In fact, several states require welfare recipients to follow a rigid order of services. For example, California requires an initial appraisal, then basic education or ESL for those below a certain score, and finally three weeks in job search assistance; those failing to find jobs then go through vocational assessment and develop an employment plan that may include further education in vocational skills training. Similarly, Florida requires a sequence in which individuals who fail to find employment after a job search take the TABE, enroll in remedial programs, and only then go into job skills training. In such cases, remediation must precede skills training, often by relatively long periods, so the chance to coordinate remediation and skills training is lost. Recognizing the disadvantages of its sequential approach, California is now experimenting in four counties with "concurrency"; individuals enroll in remediation and skills training at the same time, but the dominant approach—for that very small fraction of participants who receive any skills training at all—is clearly still sequential.

Finally, and not surprisingly, there is no evidence about the effectiveness of remediation within welfare programs. Although there were careful evaluations of welfare-to-work pilot programs during the 1980s (see Gueron, 1987), none was able to distinguish the contributions of different services to changes in earnings and welfare dependence; indeed, it is difficult even to determine how much basic education individuals received in these pilot programs.[31] Although the evaluation of the Minority Female Single Parent

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[31] There is a tendency in the Manpower Demonstration Research Corporation (MDRC) evaluations of welfare-to-work programs to lump all types of education and training together, making it impossible to tell just what individuals received. In the San Diego experiment, the program clearly increased participation in both college-level courses (in the AFDC-U sample only) and in basic education, though a surprising amount of education and training among the controls means that the differences, even when statistically significant, are surprisingly small (Hamilton & Friedlander, 1989, Table 3.1). In the Virginia case,

Demonstration found the most effective program to be one which integrates remediation with job skills training (Burghardt & Gordon, 1990), this evaluation, too, could not disentangle the contribution of instruction in basic skills to the outcomes. Most welfare-to-work programs have discovered a much greater need for remediation than anticipated (e.g., see Riccio et al., 1989), and there is a consensus that remediation is one of the most important services that welfare-to-work programs can provide; however, in a strict sense this convention rests on assumptions rather than evidence.

Secondary Vocational Education

Although we did not include secondary vocational programs in this study, other research (Grubb, Davis, Lum, Plihal, & Morgaine, 1991) provides evidence about reforms at the secondary level related to the remedial programs we examined. For a variety of reasons, there has been an upsurge of interest in integrating vocational and academic education. Such integration can serve various ambitious goals, including the reconstruction of many aspects of high school; however, when the purpose of integration becomes the enhancement of basic skills among vocational students, it becomes a form of remediation.

One approach, has been to modify vocational curricula to include more academic or basic skills. These curricula are good examples of the skills and drills approach—providing drills in such conventional subjects as vocabulary and spelling, exercises filling in blanks in sentences, comprehension questions based on short reading passages, and arithmetic problems including word problems—with the vocabulary, reading passages, and word problems drawn from a variety of occupational areas. (The appendix to Grubb et al., 1991, lists a variety of these materials.) But apart from the fact that such materials promote a passive form of learning, they are only weakly connected to vocational skill training because they cover many occupational areas and most examples are trivial. We have never seen such materials used by vocational teachers; several reported that the existing materials are not useful because of inappropriate content, and others commented that teachers need to develop their own materials tied closely to their own vocational subjects.

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however, the welfare-to-work program failed to increase education or training significantly (Cave, Freedman, Price, & Riccio, 1986). The real increases in most of the demonstration projects come in job search activities; a reasonable interpretation is that the modest positive outcomes are due to increases in job search, not to education or training.

A different approach has been to give the responsibility for remediation to academic instructors. A few area vocational schools, for example, have hired math and English teachers, who then teach modules to students in vocational classes, collaborate with vocational instructors to provide them ways of reinforcing academic material, work with students in small groups or one-on-one, and teach remedial classes. A more thorough change has been adopted in Ohio's Applied Academics program (Ohio Department of Education, 1990), in which academic instructors are assigned to teach courses in applied math, applied communication, and applied science to vocational students. This allows these classes to be tailored to specific occupational areas; for example, math teachers cover different subjects for electronics students than for drafting and design students; the applied communication class for secretaries covers rules of grammar, punctuation, and usage, while the same course for auto mechanics stresses communicating orally with customers and co-workers, reading instruction manuals, and filling out various forms. Because academic teachers spend some time each week in vocational classes, they become familiar with vocational skills training and can devise curricula that are closely connected to these skills. We saw some remarkable team teaching and some other exemplars of integrating vocational skills training with academic instruction in various Ohio schools. In addition, it was clear that the incorporation of academic instruction into vocational programs provided motivation that would otherwise be missing.

There are, then, some examples in secondary vocational education of remediation linked closely to vocational skills training. When we examine functional context training and its offshoots, in Section Four, these secondary examples provide some insight into the possibilities for integrating remediation with skills training. However, the Ohio approach also contains a serious limitation, one that affects other remedial programs. As long as vocational education or shorter-term job training aim to prepare students for entry-level positions in occupations which require relatively basic academic skills, the level of academic skill instruction will remain low. Although electronics and drafting may require algebra, geometry, and trigonometry, individuals preparing to be secretaries, auto mechanics, and animal care workers need no more than simple arithmetic; and the relatively low reading and writing skills required in most entry level occupations similarly set a ceiling on what it makes sense to teach. Without providing students a vision of a sequence of occupations requiring higher and higher levels of academic competencies, it becomes difficult to justify much more than remedial education in most applied academic courses.

Guessing the Scope of the Remediation System

How large is the current system of remediation? Generating national estimates would be nearly impossible. Some programs (e.g., JTPA) don't collect information which would allow national estimates to be derived; in other cases (e.g., community colleges), estimates are available for individual institutions, but aggregation to the national level would be difficult because of inconsistent data systems among states. The variation in adult education makes it extremely difficult to estimate the magnitude of the largest component of remediation, and the task of converting short-term enrollments to a consistent basis (e.g., full-time equivalents) presents yet another difficulty. We know of no effort to develop national figures.

However, the California Workforce Literacy Task Force (1990) has developed estimates for California that indicate probable orders of magnitude. These estimates, presented in Table 3, required great time and effort, and they are still subject to many limitations (see some of them noted at the bottom of the table). Still, they indicate patterns for California that we think are true nationwide. Most obviously, the adult education system—provided in California through both adult schools run by school districts and regional occupational centers and programs—accounts for the largest share of remediation, almost two-thirds of total spending. The community college system comprises the second-largest component, spending about fifteen percent of the total. In other states the balance of adult education and community colleges might be different, since some states give responsibility to community colleges for adult education; on the other hand, most other states have relatively smaller community college systems than California. However, the conclusion that remediation in adult education is larger than in community colleges seems correct, and it is consistent with our interview results that most JTPA and welfare programs refer their clients to ABE rather than community colleges. The third largest component, the JTPA system, accounts for roughly seven percent of total spending in the state, much less than either of the other two programs.[32] (In these figures, funds from the state's welfare-to-work programs are spent through other institutions, and, therefore, do not show up as a

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[32] A footnote acknowledges that the methodology for the JTPA estimate is "very rough." We suspect that the JTPA figure is an overestimate, since it implies that twenty-two percent of total JTPA spending in the state went for basic education, which strikes us as too high. However, the basic conclusion that JTPA is not a major contributor to the overall system of remediation is surely true, simply because of the overall scope of JTPA and its emphasis on job skills training.

Table 3

California's Workforce Literacy Programs

Program	Estimated Funding	Estimated Numbers Served
Adult Schools	$461,000,000	199,500 ADA
Community Colleges	129,000,000	86,500 ADA
Regional Occupational Centers and Programs	95,000,000	147,396
Public Libraries	3,063,000	24,249
Job Training Partnership Act	61,600,000	47,230
Employment Training Panel	4,500,325	1,600
Division of Apprenticeship Standards	5,998,000	50,000
California Department of Corrections	58,600,000	15,000
California Youth Authority	30,800,000	6,000
County Jails	5,700,000	5,323 ADA
California Conservation Corps	512,000	1,460
California Literacy, Inc.	Varies greatly	13,625
Literacy Volunteers of America	Varies greatly	1,750
Totals (see caution below)	$853,261,325	599,633

Note: These are estimated funding and numbers served for participants in non-credit or remedial education programs in Fiscal Year 1990-1991, except where noted. CAUTION: Total dollar figure overestimates amounts for the eleven programs with funds listed due to duplicate reporting such as JTPA monies mixed in the Adult Schools' budgets. No funding listing was available for two of the thirteen programs. For these reasons, the total funds given do not accurately state the exact amounts available for adult literacy education. The total numbers served is also misleading because it mixes ADA figures, in which one ADA may involve two or more students, with actual individual participation in some programs. Thus, the numbers served are probably underestimated. Apparently no one knows the exact funding or numbers served in these programs.

Source: California Workplace Literacy Task Force (1990).

separate amount.) The remaining enrollments and expenditures take place in much smaller programs. In particular, the voluntary programs like California Literacy Inc. and Literacy Volunteers of America are tiny compared to publicly funded efforts. The real action in remedial education takes place in adult education and community colleges; the widespread publicity given to voluntary efforts and to the experimental programs developed by corporations, CBOs, and university researchers misstates the relative importance of such institutions in the existing system.

A second conclusion is that the majority of funds for remediation come from state government, in the form of aid for adult education and community colleges, rather than from federal sources. Table 3 shows that federal support through JTPA is clearly small, roughly $60 million. Support through the Vocational Education Act must be small because only forty-five percent of the state's allocation of roughly $100 million went to community colleges, and much of this funded equipment and other purposes more directly related to skills training. Federal support for remediation through GAIN was probably very small, since GAIN relies on adult education and community colleges for remedial education. In addition, funding through the federal ABE program is similarly small, perhaps $20 to $40 million.[33] The federal share cannot be more than $100 million, therefore, or perhaps ten to fifteen percent of overall expenditures. Indeed, the dominant pattern of cooperation in this system is for federally initiated programs that are badly underfunded relative to what they are asked to do—JTPA and JOBS—to access state-supported ABE and community college programs. Federal funding may be increasing, but it is far from being a major component of the system.

Finally, by almost any account, total funding for the remedial system is large. If California spends $800 to $900 million, then—because California represents roughly ten percent of the country—national spending might be $8 to $9 billion. Even if this estimate is off by fifty percent, the magnitude of remediation is considerable. In bits and pieces, with little planning or discussion, a substantial enterprise has developed.

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[33] The federal program provides about $200 million annually. California usually receives about ten percent of federal funds, but early results from the National Evaluation of Adult Education programs indicate that California had twenty-two percent of clients in October 1990, suggesting the state might have received as much as $40 million.

The Nature of Remediation in the Education and Training System

Despite the enormous variety of remediation, several clear patterns in existing programs emerge. One characteristic—perhaps so obvious that it might be overlooked—is that remedial programs are ubiquitous. In every one of the twenty-three communities we examined, a rich set of institutions provide basic skills instruction and developmental education. This is not to say that the offerings are adequate: Most providers report of being overwhelmed with the demand, and the biggest issue they face will be keeping up with the increasing numbers needing remediation. But there is a rough system in place nearly everywhere.

A second characteristic of this system is that—in theory—it is structured to provide a hierarchy of programs from the lowest levels of literacy (and, to a lesser extent, math competency) to the highest. A tripartite structure of programs exists in most communities. Individuals who test at the lowest levels—for example, under a fourth grade level of equivalency—are typically referred to volunteer literacy programs using one-on-one tutoring, sometimes associated with libraries. The next highest stage includes ABE (or pre-GED) programs, often described as covering the equivalent of fourth to seventh or eighth grade instruction. In turn, they prepare individuals for GED programs that are designed to help individuals to pass the GED. Because the GED is widely interpreted as the equivalent of a high school diploma, individuals who have passed the GED are considered out of the remedial system and ready for college.[34] This tripartite structure is sometimes a matter of state policy: In Tennessee, for example, individuals below a 4.9 grade level are sent to literacy programs; those between grades 5 and 8.9 go to basic skills courses; and those between grades 9 and 12.9 enroll in GED courses. More often, such a division has developed informally, as programs assess what levels of students they can handle.

Within community colleges a slightly different structure exists, but there is still a tendency to have a three-part set of offerings. The goal is usually entry into the first college-level English course rather than completion of the GED; from that standard, community colleges offer courses that are one and two levels down from the college level,

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[34] However, the GED is widely described as requiring only an eighth or ninth grade reading level, and those who have examined it closely claim that individuals can pass it with only a fifth or sixth grade reading level (Quinn & Haberman, 1986).

with many, though not all, offering a third level for individuals without any reading skills. Therefore, a well-developed remedial program will have three levels of reading, three levels of writing, and three levels of math courses, and it will accommodate a range of individuals that includes JTPA and welfare clients. It will also differentiate reading courses into those for native speakers and those for non-native speakers. These courses then lead to the college-level English and math courses that prepare individuals for transfer to four-year colleges.

In theory, then, the system of remediation in many communities allows individuals to start at any level, move through increasingly difficult material, and then receive a GED or move into college-level courses. In practice, however, the mechanisms of tracking students are poorly developed. Welfare-to-work programs give caseworkers the responsibility for making sure that welfare clients make progress, but this tracking mechanism doesn't always work well. Some community colleges have developed student tracking systems which provide information on the progress of students (e.g., see Palmer, 1990); these can inform students if they lag behind in a sequence of courses and alert guidance counselors who can then investigate why students are not making adequate progress (as in the Miami-Dade system described in Roueche, Roueche, & Baker, 1985). However, these tracking systems are not by any means uniformly in place, and the resources that community colleges have for follow up if students fall behind in their programs are limited. In practice, then, a smooth continuum of courses—with mechanisms helping students make the links among pieces of the continuum and providing guidance or tutoring if they falter—exists in very few areas, though a few community colleges come close.

Yet another restriction on the continuum of remediation is that most programs have relatively modest ambitions. Most JTPA and welfare-to-work programs hope to advance their clients one or two grade levels, and provide so little time—as little as four weeks in many cases—that even this much progress seems unreasonable. The time in ABE for most students is also relatively short, as well as quite erratic, so that gains in most cases are limited to a grade level or two; at the most, adult education programs hope that their students can pass the GED, but at the same time, many adult instructors recognize that the GED is not very helpful in obtaining employment. Community college programs are less subject to limitations in their ambitions, since the stated goal in most of them is to enable students to enter college-level courses and then to progress to a vocational or academic

degree; but here, too, rates of noncompletion are high. Limited funding, particularly in JTPA, welfare, and adult education, is partly responsible for limited ambitions, and, of course, there are high dropout rates in adult programs. As a result, what appears to be a continuum of remedial education in many communities in practice is difficult for individuals to negotiate.

The curriculum in remedial programs appears to have changed substantially over the past fifteen years. Virtually all remedial programs report extensive use of materials that are individualized, self-paced, and often open-entry/open-exit, rather than operating with the rigid starting times associated with conventional schooling. (Of course, when institutions such as community colleges provide both lab settings and classroom-based discussion sessions, the classroom portions must follow a conventional schedule.) Many curriculum materials are also competency-based, so individuals progress to new units or subjects when they pass a competency test; conversely, those who fail to pass such tests are given additional lessons and practice in the specific skill until they can master it. These characteristics are generally true of both print-based curricula and computer-based methods; indeed, many remedial instructors reported their preference for computer curricula. The curricula include a battery of individual tests that make it easy to identify skill levels, and the computer presents lessons in sequence without any intervention from a teacher.

In contrast, when Cross (1976) reviewed adult education in the early 1970s, most programs provided a relatively uniform curriculum, with progress based on seat-time—the amount of time spent in the program—rather than acquired competencies. She recommended individualizing instruction, mastery learning methods, and self-paced methods as ways of allowing individuals to progress through a series of skills at their own pace; she argued, as did other proponents of mastery learning, for substituting an educational process in which the amount of time remained constant for all students and the amount of learning varied, with one in which the amount of learning was constant while the time to master particular skills could vary. Since then, evidently, these recommendations have been widely embodied in curriculum materials, with a "new orthodoxy" widely practiced.

As part of the new orthodoxy, the majority of remedial programs in our sample of communities and the majority of those we visited, follow the pedagogy we label skills and drills. In this approach, complex competencies—the ability to read, for example, or the

ability to use mathematics in various forms—are broken into smaller discrete skills such as the ability to decode words, or to recognize the point of a three-sentence paragraph, or to add two-digit numbers with carrying. Students drill on each of these subskills until they have mastered them (i.e., until they can pass a small exit exam), and then they move on to the next most difficult skill. While we will examine the assumptions underlying skills and drills more carefully in Section Three, "The Nature of Effective Programs: The Conventions and the Structure of Skills and Drills," it is important to recognize that most of remedial education follows this approach (a few exceptions are described in Section Four, "Alternatives to Skills and Drills"). Remedial education is provided in a bewildering variety of institutions, with many different funding sources and with individuals attending for many different purposes. In addition, there is no national curriculum, no textbook approval process like the one that standardizes K-12 texts in many states, and no mechanisms like college entrance requirements and the SAT examination to standardize the curriculum.[35] In spite of these differences, there is still a stunning sameness to the instructional methods and curriculum materials in remedial programs.

Finally, almost no remedial program in our sample of communities linked its curriculum in any way to the vocational skills training that would normally follow or, in the case of concurrent programs, that students are taking simultaneously. There is increasing recognition that many individuals learn best when competencies are taught in some concrete application (or "contextualized"), and "functional context literacy training" has become a popular notion in some circles, but these principles have not yet been embodied in curriculum materials, teaching methods, or program philosophies. Several administrators commented that the lack of connection generates motivational problems when individuals fail to see the relevance of abstract skills and drills to their occupational futures, and these administrators expressed the desire for some integration; however, almost none of them had found the time, resources, or curriculum materials to do so.

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[35] There is a partial exception: The goal of most adult education and of many JTPA and welfare programs that refer their clients to adult education is to enable individuals to pass the GED. Because the GED is a conventional multiple-choice test of reading comprehension and arithmetic computation, preparation for the GED leads naturally to skills and drills.

Coordination in Remedial Programs: Its Status and Value

Because so many programs provide remedial education, almost every community we surveyed has many providers. The offerings in the Motlow State Community College SDA in Tennessee—a six-county rural area—provide a good example. The SDA contracts with one area vocational school and four non-profit CBOs to provide remediation to JTPA clients, and, in a sixth county, the SDA operates a remedial program itself. The area vocational-technical school provides a GED program as well as basic education for JTPA students in its vocational programs. The community college has a developmental studies program for entering students who score low on a mandatory assessment, and the local school district provides ABE programs as well as a JTPA 8-percent program. Nearly every education and training institution participates in remediation then. The only exception is that there is still no welfare-to-work program, though JTPA recruits at local welfare offices. There are, too, some exceptions to the general pattern of multiple remedial programs: In southwest Wisconsin, Southwestern Wisconsin Technical Institute provides virtually all remediation, at its main campus or in off-campus programs, as do the Heart of Georgia Technical Institute in Oconee County, Georgia, and the adult education system, widely described as "the only game in town," operated by the county school board in Broward County, Florida. However, these are clearly exceptions; in most communities, several types of remediation co-exist.

Despite the number of remedial programs and the proliferation of funding mechanisms, we heard little complaint about duplication and overlap.[36] One reason is simply that the need for remediation and ESL is much greater than the resources available; most providers would welcome additional programs or additional funding, rather than seeing others as competitors. A second reason is that coordination—in the form of referring individuals to other programs—seems relatively good. Referrals from JTPA and welfare-to-work programs, predominantly to adult education but also to community

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[36] There is one possible area in which duplication may be a problem: The assessment of skill levels may take place several times for one individual. For example, a JTPA client is typically assessed upon entering the program, particularly to determine which programs he or she can enter; another assessment may be carried out upon referral to a particular skill training program; and if that training provider also incorporates some basic skills instruction, there may be a third assessment to ascertain exactly where in a sequence of reading and math skills to begin. Since these assessments—typically, conventional multiple choice tests—are especially trying for individuals with low skill levels (Lytle, Marmor, & Penner, 1986), it is possible that multiple assessments contribute to high dropout rates. For other evidence that the assessment process is threatening and can contribute to dropping out, see Hershey (1988).

colleges, are especially common. While there are complaints about paperwork (especially for welfare-to-work programs with their complex reporting requirements), there were no complaints about the unwillingness of other programs to refer their clients, nor were there claims that political allegiances and turf issues prevent cooperation—as there frequently are for job skills training.

Cooperation in the form of referral is partly caused by the desire not to duplicate services and—particularly for JTPA and welfare programs that do not see themselves as educational institutions—by the desire not to expand into another area. In addition, referral is also driven by a motive we have referred to as *cost-shifting* (Grubb & McDonnell, 1991). That is, programs like JTPA, with a limit on funding, and welfare-to-work programs, without adequate resources, are constantly looking for ways to expand services by shifting costs to other programs—particularly to institutions (e.g., adult education and community colleges) which have open-ended, enrollment-driven funding. This is a fiscal motive for cooperation, not one driven by a concern for the quality of services; with only a few exceptions, the administrators in our sample communities refer their clients to ABE and community college programs because they don't want to reinvent the wheel, not because they have any evidence about the effectiveness of these programs. Indeed, few of the JTPA and welfare-to-work programs we interviewed had established any policies about the content of remediation; and few knew much about the content of basic education in their area.

However, in another sense there seems to be little coordination. As we pointed out earlier, there are few mechanisms of tracking individuals through remediation. In addition, while a few communities have established central councils which provide information to individuals seeking basic education, most have not. As a result, individuals approaching the education and training system are likely to feel bewildered and to find a way into a program almost accidentally (Hull, 1991). In this sense, then, coordination in most communities is poor, even though cooperation in the form of referrals is common.

In this context, a crucial question is whether cooperation in providing remediation is a good thing. One troubling aspect of the referral process—given a firm convention within adult education (reviewed in the next section) that policies and goals should be carefully established—is that few programs develop policies of any kind before they refer clients to remediation. Referral seems expedient, rather than principled or planned; some

administrators who admit or even boast that they are not educators, especially in JTPA and welfare-related programs, seem relieved to find another institution providing remediation so that they need not have to think about it. While the resulting division of labor may seem rational, it does not necessarily result in individuals receiving the education they need.

Since there are few mechanisms to track individuals, it is generally impossible to tell whether a person referred from JTPA to an ABE program ever enrolls, completes, or manages to enter job skills training. While we know of no evidence, we suspect that many individuals referred to other programs become "lost." The rates of completion in most remedial programs are relatively low to start with for a variety of reasons, ranging from personal difficulties in individuals' lives to the uninteresting curriculum in many programs. Moreover, adding a change among institutions introduces an additional barrier.

Third, a process of referring individuals to another program for basic skills instruction makes it impossible to link remediation to job skills instruction. Even though the effectiveness of functional context literacy training or of programs integrating remediation with job skills training remains unclear, there are still motivational advantages to linking these two components.[37] However, the referral process generally requires individuals to complete remediation or to achieve a specific level on a test before entering job skills training, a sequence that seems likely to eliminate the lowest-performing individuals most in need of both remediation and job training.

Finally, we remain concerned about the breadth and effectiveness of programs to which individuals are referred. Individuals are most commonly referred to ABE programs; however, these are also relatively limited, at least compared to community colleges' developmental education, in the subjects they offer, in the levels of difficulty they provide, and in the instructional methods they use. The dropout rates from ABE are generally thought to be very high—even though it is impossible to find substantial evidence—and there is virtually no outcome evidence. Community college programs are more likely to offer remediation in reading, writing, math, and a variety of employability and life skills, as well as courses ranging from the elementary to the college level; the best of community

[37] Several administrators in our sample of communities remarked that individuals find remedial programs boring, and fail to see the relevance of curriculum materials devoid of any occupational content to the jobs they hope to enter. Conversely, CET—one of the few to integrate remediation into skills training—developed their approach because of the dropout problems they experienced when remediation and skills training were sequential.

college programs are much more likely than ABE programs to offer both classroom-based and individual or lab formats and to experiment with alternatives to skills and drills. Nevertheless, here too dropout rates seem to be high and effectiveness unclear; given the variety of community college offerings, it is disconcerting to find other programs referring clients to them without clear guidelines, policies, or evidence of effectiveness.

In sum, the provision of remediation may be an area of education and training where cooperation in its common form of referral may *not* be desirable. Unless there are clear guidelines for remedial programs, methods of tracking individuals among programs, and better evidence of effectiveness, referral seems like a mechanism for claiming to address the skill deficiencies of the adult population—but without any of the conditions necessary to ensure success.

Information and Evaluation

A striking characteristic of the existing remedial system is the lack of information. Many providers—especially JTPA programs that delegate remediation to subcontractors, and welfare-to-work programs with incomplete management information systems and individuals lost in the system—could not even tell us how many individuals were enrolled in remedial or basic education. Fewer still could provide any systematic information about completion rates or other measures of intensity—that is, how many individuals had completed various proportions of a program. Administrators usually provided estimates of enrollments and completion rates, but it was clear that their estimates were often very rough. While most programs claimed to carry out evaluations of their students, almost none of them sent the evaluation materials they promised to us. Most curricula require pre- and posttests of individual students to monitor their progress through a sequence of skills, and these tests are used to evaluate individual students; even so, the information they provide is not used to evaluate the program as a whole and is, in fact, not suited to such an evaluation. The almost complete lack of systematic data means that these programs do not have the information necessary to show evidence of their success to others (except success measured by continued enrollments), to be self-conscious about their performance, or to improve their offerings.

Where evaluations have been carried out, they are often seriously flawed. The most common method of evaluation is to compare the pre- and posttests of groups of students enrolled in remedial courses without any comparison or control group.[38] Conventionally, increases in scores are presented as evidence that the program works. However, there are many other plausible explanations for such an increase. One is that only students making substantial progress stay in remedial programs until the posttest. Since many students in developmental education (from which most of these evaluations come) are concurrently enrolled in other courses, these other courses rather than the remedial offerings may be responsible for test score changes. Regression to the mean—many students selected on the basis of low test scores improving over time merely because their initial low score was the result of chance rather than low achievement—and practice effects—students improving because of gaining practice with test-taking methods—may also be responsible. The upshot is that it is impossible to conclude anything about the effectiveness of remedial programs from this approach to evaluation.

In other cases, gathering data for an appropriate control group provides somewhat better evidence of effectiveness. For example, the New Jersey results cited above (Morante et al., 1984) compare attrition rates for those students who have completed remediation, those who have started but dropped out of remedial courses, those in need of remediation who have not enrolled, and those not needing any developmental education; the results from Miami-Dade Community College in Tables 1 and 2 in effect contain ten comparison groups. There are still problems with these evaluations, since different groups of individuals needing remediation may not be comparable and are certainly different from those not needing remediation; but the findings with comparison groups are still more persuasive than simple pre- and posttest comparisons. In addition, the outcome measures used—retention within the community college and, in Florida, passing the CLAST—are more meaningful than test scores because scores may simply reflect test performance rather than any progress toward educational goals.

However, even in evaluations with comparison groups, the analyses typically ask an inappropriate question. A comparison of outcomes between a group that has completed some education and another that has failed to complete any education can answer only

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[38] On the dominance of pre- and posttest comparisons, specifically in remedial mathematics programs, see Akst (1986). Only twenty-four percent of evaluations used a comparison group, defined as students needing remediation but not taking the remedial program.

whether more of that education is effective compared to less of it. These evaluations can, therefore, establish whether remediation is worth doing at all; if the results are negative, remediation should presumably be abolished. But almost no one proposes eliminating remedial education: The competencies of many students entering community colleges, JTPA programs, and welfare-to-work programs are too limited to ignore. The appropriate question is to ask *what kinds of remedial programs are most effective for which students*. This requires an evaluation in which the outcomes of different approaches to remediation—varying, for example, in the intensity, the relative balance of classroom-based and lab-based instruction, the use of teacher-based methods versus computer-based methods, the use of skills and drills versus the alternatives, or the reliance on materials drawn from occupations (as in functional context training) versus context-free materials—are compared. Such evaluations would help teachers and administrators improve existing programs, rather than providing evidence only for decisions about eliminating programs. However, we have uncovered no evaluations of this form, nor is there much pressure within remedial education for such evaluations.

From our survey of remediation, then, a picture emerges of a large and expanding system with enormously varied institutional sponsorship and different funding sources. A variety of individuals have gained access to the system by enrolling in community colleges and adult schools, by applying to JTPA, and by being forced or by volunteering to participate in welfare-to-work programs. With its great variety and its lackadaisical data collection, it becomes difficult to describe the particulars of this system. However, some general characteristics stand out: the availability of several distinct levels of the system, usually poorly articulated; and the dominance of pedagogical methods which rely on individualized, self-paced, competency-based materials, driven by a skills and drills approach and unconnected to either the academic education or vocational training for which remediation presumably prepares people. While there is general recognition of high rates of noncompletion, there is little evidence about completion rates, or even—in some cases—a consensus about how to define completion. While there are high hopes for these programs, there is almost no evidence to indicate which of these programs are effective at all, and still less that would enable teachers and administrators to improve them.

In the next section, we address the issue of effectiveness in greater detail. Despite the lack of evaluation, there is extensive literature on the characteristics of good programs—literature based on experience and convention. This accumulated wisdom

forces us to examine the pedagogy of existing programs more carefully, as a way of coming to terms with the deficiencies of existing programs.

THE NATURE OF EFFECTIVE PROGRAMS: THE CONVENTIONS AND THE STRUCTURE OF SKILLS AND DRILLS

In the absence of firm evidence about which remedial programs are effective, it is necessary to search for other ways of judging existing programs. Fortunately, there is extensive literature about "good practice" in adult and remedial education, drawing on the experience of teachers and administrators, on the fragments of research available, and often on simple common sense. These conventions provide some standards against which to measure practices in remedial education. We can then examine more carefully the dominant approach in remediation we label skills and drills to see whether it conforms to good practice in adult education. The comparison clarifies how different the assumptions of skills and drills are from the ideals of good practice.

The Conventions of Good Practice in Adult Education

The literature describing good practice in adult education, often incorporated in manuals providing advice on "how to do it" to administrators and teachers, is far from uniform since it covers practices at levels from the most elementary (in volunteer and ABE programs) to college-based developmental programs. Not surprisingly, debates rage about the best methods of instruction, some of which we review in this section. Still, a number of prescriptions come up repeatedly in this writing. The most common recommendations in remedial education include the following:[39]

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[39] In this brief section we draw upon more extensive reviews of the ABE literature by Balmuth (1985); Solarzano, Stecher, and Perez (1989); Kazemek (1988); Fueyo (1988); Fingeret and Jurmo (1989); Salvatori and Hull (1990); and Sticht (1988). On recommendations for good practice at the college level, we draw on reviews by Trillin (1980) and Maxwell (1979), and on older reviews by Cross (1976) and Roueche and Snow (1977).

- Programs for adults should be adult-centered. Adults obviously have concerns that are different from those of children; these may be vocational, avocational, familial, political, or community-oriented, but good programs should determine what those interests are and cater to them. They also have more experiences and knowledge than children do, on which programs can draw. Often this common-sensical point is a plea to develop more adult-oriented materials—since many remedial texts and curriculum materials seem to be written with children or adolescents in mind—or to use supplementary materials more engaging to adults than textbooks.

- Remedial programs should provide experiences and tasks meaningful to adults (Balmuth, 1985; Mikulecky, 1982) or, for students in college, should be integrated with their other educational experiences (Cross, 1976)—rather than being disconnected from the rest of their lives.

- The content and material in adult remedial programs should be related to adult goals or should equally meet student needs. This seemingly obvious point is partly instrumental: Programs which are not meeting adult needs will experience high dropout rates (Balmuth, 1985), in which case they have no chance to improve the competencies of their students.

- The teachers in adult programs should have certain affective characteristics—respect for students, belief in their abilities to learn, sensitivity to their special needs, warmth, understanding, and patience—as well as the ability to teach well in conventional terms.

- Programs should have clearly specified goals and methods. In some cases this recommendation seems intended to delineate teaching methods in sufficient detail to "idiot proof" programs (e.g., ABE programs) that are forced to rely on untrained or inexpert teachers (Balmuth, 1985), but in other contexts this is a recommendation that programs must decide their purposes and develop approaches related to those purposes before they can be successful.

- In the absence of general agreement or conclusive evidence about the most appropriate teaching methods, programs should remain flexible in the choice of curricula and teaching methods they use. In particular, there is ongoing

disagreement about the relative emphasis on one-on-one versus group instruction, the appropriateness of self-paced learning versus teacher-paced methods, and the appropriate use of computers and of other media such as audio methods, as well as about the methods we label skills and drills and the alternatives. Recognizing disagreement, the counsel of flexibility and variety is quite common. Many programs considered exemplary use a variety of materials and approaches, partly because of the recognition that adults (as well as children) may learn in many different ways but also as a way of finding a middle ground in the debates over methods.

Most of these conventions seem self-evident; it shouldn't require extensive experience, a review of the literature, or complex evaluations to conclude that programs for adults should recognize the interests and goals of adults. What is surprising, however, is how regularly these conventions are violated by the dominant practices within remedial programs, particularly by the assumptions and the practices of skills and drills.

The Assumptions of Skills and Drills[40]

The skills and drills approach to learning is widespread in remedial programs, even in those which have self-consciously tried to take other approaches; it is also the dominant method of the K-12 schooling system (Cuban, 1984). In addition, it appears in unfamiliar forms; for example, some of the practices which follow functional context literacy training are variants of skills and drills. This dominant approach has certain obvious advantages from the perspective of remedial programs, and it forms an internally consistent approach to instruction. There are, then, many reasons for its dominance, as we will argue more carefully below.

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[40] Our description of skills and drills is a distillation of the programs we visited and the curricular materials and computer programs we have examined. What we describe as skills and drills is similar to the descriptions of ABE programs in Fueyo (1988) and Kazemek (1988), the teacher-centered instruction described by Cuban (1984) and Knowles (1980), the "bottom up" approach described by advocates of whole language like Goodman (1986), the "skills development" methods described by Tomlinson (1989), the "conventional wisdom" in elementary classrooms described by Knapp and Turnbull (1990), and the conception of "passive learning" (as distinct from "active learning") mentioned in many contexts. The developmentally appropriate programs favored by early childhood educators (e.g., Bredekamp, 1987) over conventional "school-like" approaches also contain an implicit description and critique of skills and drills in elementary classrooms. However, we have not found an explicit analysis of the assumptions underlying skills and drills.

The basic assumption underlying skills and drills is that complex capacities—which include, reading, writing, and mathematics—can be broken into discrete skills which can be ordered in a rigid hierarchy from simple to difficult.[41] Then students perform drills which teach them each discrete skill, moving to the next most complex skill only when the previous one has been mastered. The sequences of skills are familiar to anyone who has gone through the American school system. In reading, students progress from recognizing letters and their sounds, to sounding out (or decoding) words, to decoding simple sentences, to reading first sentences and then paragraphs for their literal meanings, to reading short passages for the main point or for simple inferences. In writing, students progress from sentence completion exercises, to simple sentence constructions, to three-sentence paragraphs with an introduction and a conclusion, to structured forms such as the three-paragraph and the five-paragraph essay. All emphasize correct forms of writing (i.e., spelling, punctuation, and grammar) and provide many opportunities for drills. In math, students work through whole numbers, simple addition and subtraction, then addition and subtraction with carrying and borrowing, multiplication and the glories of multiplication tables, division and the agonies of long division, to fractions, percents, and conversions among measuring systems; "problem solving" takes the form of word problems, again using simple arithmetic operations. Each step in these sequences is broken into many smaller skills, of course; the typical activities include fill-in-the-blank exercises, spelling lists, grammatical errors identification, reading exercises for specific information and main points, and endless arithmetic examples. The purpose of drills is to generate facility and automaticity—the ability to perform a skill easily and without much thought.

Teaching via skills and drills can take several forms. In the K-12 system, a classroom format is the most common; then everyone in the classroom—or, at the very least, groups of children within an internally tracked classroom—follow the same sequence. Classrooms using skills and drills are used in adult remediation, too; but working individually on workbooks and programmed texts is more common than in the K-12 system. Such individual approaches often take place in labs—reading, writing, and math labs—with many students in a space working independently and with one or more teachers circulating to help students or working with them one-on-one.

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[41] What skills are "easy" and "difficult" are determined from the viewpoint of curriculum development, rather than from the perception of the learner or an understanding of learning. For evidence that students often do not perceive skills in the same order of difficulty as standard curricula, see Bruner (1990).

A third form of skills and drills includes a wide variety of computer programs. Instructors who run computer-based programs cite many advantages: Computers are non-judgmental and endlessly patient, unlike some teachers; they eliminate the possibility of embarrassment in front of peers; they never tire, so students can work on computers at odd hours rather than having to conform to a teacher's or a class's schedule (a special advantage for adult students who have busy lives and irregular hours); and—in a world increasingly filled with computers—they have the ancillary benefit of familiarizing students with computers. Many instructors also speak of computer-based programs as if they constitute a different teaching method and allow students who don't do well with print materials to learn in another way. However, the vast majority of computer-based programs used in remedial programs are simple skills and drills exercises conveyed to a computer screen—they incorporate the same fill-in-the-blank exercises, word recognition, vocabulary, punctuation, grammar, reading comprehension, and arithmetic examples and word problems.[42] When compared to classroom-based skills and drills, the most important differences of computer-based approaches are that the reading passages are shorter (since a typical screen can only hold a few sentences) and that there is no possibility for elaboration of the kind a teacher can provide—diagnosis of a pattern in a student's errors, alternative explanations of a tricky point, supplementary materials, or discussions (classwide or between teacher and student) about an issue. In addition, computer-based programs are often especially rigid about the student's progress through a sequence of material: Some programs will "lock out" students from any unit except the one they are supposed to be working on and will prevent students from shifting to other units until they pass a mastery or exit test.

Proponents of skills and drills claim that individual work with workbooks and computer-based programs lets students work at their own pace and allows programs to be

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[42] Many of our comments about computer-based programs in remedial programs are similar to those of Weisberg (1988), who recommended that local programs develop their own software rather than using any of that now on the market. We note that many computer-based instruction programs exist—such as "intelligent tutoring systems"—that are not based on skills and drills, but we did not see them used in the programs we examined. In their meta-analysis of computer-based adult education programs, Kulik, Kulik, and Shwalb (1986) found that eighteen of the twenty-three studies they included involved "computer-assisted instruction" providing drill and practice (i.e., skills and drills); only three were "computer-managed instruction," and two were "computer-enriched instruction" (pp. 239-240). While they found an overall positive effect size of .42, indicating the superiority of computer-based methods over conventional classroom instruction, effect sizes were substantially larger for computer-enhanced instruction (1.13) and computer-managed instruction (.72) than for computer-assisted instruction (.29) (p. 245)—suggesting that skills and drills applications of computers are much less effective than other approaches.

individualized. "Individualization" means something quite specific: An initial test identifies the student's achievement level within the hierarchy of skills—something which is unambiguous because for every subject there is only one hierarchy of skills, ranked from easiest to hardest—and then the student begins working at the level which he or she has not mastered. An individual progresses to the next skill only when he or she has mastered the previous skill, however long mastery takes. There are several advantages to this structuring of the curriculum: It lends itself to open-entry/open-exit programs; students can progress through a skill sequence at their own pace; and students start from "where they are" and have the chance to be rewarded for success since the earliest lessons are relatively easy. However, individualization does *not* mean that remedial programs are modified to fit the interests of individual students, or that the materials are drawn from the other academic courses or vocational training they are in,[43] or that the method of teaching is changed to fit the learning style of individuals.

Individualization is often associated with student-directed learning and student responsibility. For example, Taggart (1986b) states that in the Comprehensive Competencies Program (CCP) "learners are given responsibility, choice, and a substantial amount of control" (p. 6). However, in most skills and drills programs, students are given remarkably little choice, and what choice they have is constrained by the available lessons and activities. A student can choose to work on reading rather than math, for example, but the rigid sequence of skills through which a student must progress eliminates any substantial choice. Except in those cases in which teachers have moved to a more eclectic approach, there is almost no opportunity for students to choose their own reading materials or math exercises since these are determined by the curriculum.

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[43] One partial exception is the Job Skills Education Program (JSEP), a computer-based approach converted from a military program—a process sometimes referred to as "de-greening"; see "Job Skills Education Program Information Booklet" (1990); *Implementation Handbook: Job Skills Education Program* (1990); and JSEP Pilot Test Report (1990), all available from the Center for Educational Technology at Florida State University. JSEP includes modules for various skills—e.g., ordering numbers in a sequence, spelling correctly, finding information in two-column tables. Each civilian job has a code and is linked to a particular subset of skills—for example, machinists spend more time on algebraic and measuring skills, while word processors spend more time with report writing, grammar, and reading-related exercises. In this sense, the specific skills in which an individual receives instruction are those related to the job, and skills considered not to be job-related are ignored. However, the materials used for drill and practice within each skill area are not drawn from specific occupations; they are general materials which must be used by those training for every occupation for which that skill is relevant.

The approach of skills and drills contains a number of crucial assumptions about teachers, students, and their relationships. The teacher's main responsibility is to manage the implementation of the curriculum, particularly in individualized rather than classroom-based curricula. He or she administers tests, assigns work to students, keeps track of what they have covered, assigns new work when one skill has been completed, and keeps records. Because the curriculum is embodied in textbooks, workbooks, or computer programs, teachers have no responsibility for developing curricula, determining the basic approach to the subject, or assessing how students should work. The only teaching that usually goes on is one-on-one instruction when a student needs clarification—an approach that fits neatly with the individual orientation and confines the teacher to responding to problems that arise in the curriculum itself rather than to questions that may originate outside the curriculum.

The extreme case of teachers acting as managers occurs in some computer-based programs, where those in charge sometimes describe themselves as "computer lab *managers*" rather than teachers. The most sophisticated computer programs provide management systems that keep track of assignment and reporting requirements, and the manager has little interaction with students aside from remedying problems with the computer system and occasional clarification. The blessing of these management systems has been clarified by Taggart (1986a):

> Freed from lesson planning, and with automation of time-consuming activities such as test preparation and checking, record keeping and reporting, teachers can concentrate on one-on-one instruction whenever learners encounter problems in their individual work. (p. 5)

However, in the computer labs we observed, instruction was minimal, and most interactions between teachers and students involved problems with hardware and other procedural issues. Rather than ways of increasing time for active teaching, computer-based methods seem more often to be used to "idiot proof" remedial programs and eliminate virtually all active teaching. Indeed, the preference of non-educational programs—like JTPA—for computer-based programs stems in part from the recognition that their employees are not educators; computer-based programs can be purchased "off the shelf" from vendors without having to think about any of the issues of assessment, curriculum development, and pedagogy.

In these individualized programs, interactions among students are very limited. Students learn from the curriculum materials and secondarily from the teacher—not from each other. Learning is an individual activity, then, not a social activity. A logistical problem in many remedial programs reinforces this pedagogical assumption: When programs are open-entry/open-exit and when they are individualized in the sense that students work independently, the fact that students come at different times and work on different materials further impedes any connections among them.

Skills and drills also embodies several assumptions about students themselves. The most powerful is that students are defined in terms of what they are unable to do—their deficiencies. The first stage in almost all remedial programs is an initial assessment, which is set up to determine where students are in a hierarchy of skills so that they can be assigned to the right exercise. Since these assessments (conventional multiple-choice tests) evaluate individuals along one dimension and produce a single score by which all individuals are rated, it is impossible to use them to discover other strengths, as programs that reject skills and drills often do. One discussion of JTPA efforts described the underlying motivation for assessment with the question, "What is the best approach for assessing basic academic skill *deficiencies* among JTPA youth?" (Morris, Strumpf, & Curnan, 1988, p. 1, emphasis theirs). Similarly, some writing about functional context training have noted its success in training "low aptitude personnel" in the military—those "considered to be 'below average' in trainability"—as a rationale for its application to "lower aptitude, less literate young people" in the civilian sector (Sticht, 1990). Furthermore, students in remedial programs are invariably of lower-socioeconomic status, with minorities overrepresented; they are invariably described as "disadvantaged," both economically and educationally.

To be sure, many of the teachers and administrators we interviewed took great pains to say that their students are not dumb, that they can learn, and that they are in remediation because the schools are poor rather than because of their lack of any innate ability. The problem is not simply that remedial programs assume incompetence; after all, by construction, students in remedial programs lack certain proficiencies that they or others feel they need. Rather, the problem is that the structure of skills and drills approaches allows no way to counter or modify the assumption of deficiencies. The assessment procedures, the need to take several remedial courses, and the passive nature of learning in which students have almost no choices and in which they are recipients of other's

knowledge—all these elements convey the sense that students are ignorant. While it is hard to know how students experience remedial programs, a common theme among those observing ABE programs is that many adult students dislike going back to school settings and school-like activities where they have always been made to feel dumb.

By and large, the curriculum materials in skills and drills approaches are generated specifically for teaching purposes. That is, arithmetic problems are made up rather than coming from occupational tasks or the routine chores of life; reading passages are chosen or generated because of their level of difficulty, not because students choose them or because they have any intrinsic meaning; and writing assignments are similarly disconnected from the other educational or work experiences of students. That is, the materials are decontextualized: They are independent of any aspects of students' lives. To be sure, there is some effort in materials designed for adults to use reading passages about adults rather than passages about children typical in the K-12 system; however, both in form and content, many commercial materials are similar to those in elementary classrooms (Kazemek, 1988). Otherwise, there is little evidence that materials are tailored to the issues that adults in remedial programs wrestle with.

Indeed, the independence of texts and problems from any intrinsically meaningful context reflects an assumption within the conventional approach: The texts used for reading (and the problems used for math) have an intrinsic and unambiguous meaning, and the job of the student is to discover that meaning (or the right answer to math problems). Even when students are working on higher-order skills—inference, for example, or identifying the tone or the point of view of a passage—there is invariably one right answer; and the reading passages in most remedial programs are so short and simple and so intentionally constructed to be devoid of ambiguity that there can be little room for individual interpretation. Similarly, in writing instruction within the skills and drills approach, the purpose is to create texts like those used in reading: simple, declarative, unambiguous, with a great emphasis on proper spelling, grammar, and punctuation, a text intended to have the same meaning in every context.

Two final characteristics are crucial. One is that skills and drills approaches *assume* motivation on the part of the student. The drills themselves are not meaningful or particularly interesting, nor are they intended to be; they are purely instrumental to achieving a goal—learning to read at a certain level, learning how to do long division,

passing the GED, or gaining entry to a vocational training program, for example—which is thought to be powerful enough to motivate the student. Even so, if a student wavers in his or her commitment to that final goal or fails to see the connection between remedial drills and that goal, nothing in the skills and drills approach will supply motivation. This appears to be a serious problem in many remedial programs, since many administrators in our sample of communities reported that students drop out when they fail to see the relevance of basic skills instruction to the employment they seek—a problem exacerbated when remediation is dissociated from the job skills training that (presumably) follows.

Finally, the skills and drills approach assumes that the student can reassemble individual skills into complex competencies and can apply these discrete skills in specific applications. After mastering a series of skills, the student is assumed to be able to read at some level, or write, or perform certain kinds of mathematics—competencies which typically engage the specific skills he or she has mastered. But there is nothing in basic skills instruction to help the student with assemblage and application, since what the student has mastered is a series of smaller skills. Therefore, it is possible for students to learn to decode paragraphs and extract the main point—a favorite exercise in skills and drills approaches—and yet to be unable to understand why reading for information or instruction is appropriate in a particular setting, so they won't read what they are theoretically capable of reading. It is possible for students to be able to carry out arithmetic operations and yet fail to understand which operation is appropriate in a particular case; and students may be able to write—in the sense of linking correctly spelled words together in a grammatical construction—and yet have no idea what information and tone to convey in an actual piece of writing. Particularly when tasks become ambiguous, value-laden, or complicated by interpersonal relationships, the deliberately simplified, depersonalized, and decontextualized exercises of the skills and drills approach may prove useless, unless the student can supply the necessary ability to apply them.

There is, of course, widespread support for skills and drills. It is a logical and internally consistent approach to instruction; it progresses in simple steps, starting from "where the student is," and it allows students to experience success; it also adheres to the tenets of individualized instruction, mastery learning, and competency-based instruction that have become so popular. Most individuals in our society have been taught in this way, since the approach dominates elementary and secondary schools; within the schools, it has been developed and refined over almost two centuries. In a system with limited resources

and tight budgets, skills and drills seems efficient because it moves students along a continuum toward a clear goal—rather than allowing them to explore interests of their own that may lead in unforeseen directions. The need in many remedial programs to prepare students for standardized tests—especially the GED in adult education, but other tests such as the TABE and ABLE that are used to admit individuals into job training programs or college-level courses—also reinforces skills and drills, since standardized tests generally measure performance on fragmented and decontextualized skills. The tendency in our society to generate great long lists of competencies required and skills to be mastered—true of mastery-based and competency-based approaches—leads quite naturally to skills and drills.

While there are many reasons for the dominance of skills and drills, its effectiveness is quite a different issue. There is, unfortunately, little direct evidence about the effectiveness of skills and drills relative to the alternatives,[44] so it is necessary to turn to indirect evidence. Most obviously, skills and drills violates many maxims of effective practice in adult education. It ignores the common assertion that curriculum materials should be adult-centered and involve tasks meaningful to adults. The decontextualization of the texts and of the problems in most remedial courses and the use of materials that are embedded in textbooks and computer software used for many different adults—in wildly varied circumstances with varied purposes—undermine any effort to make these materials meaningful. Secondly, skills and drills approaches *assume* what adults need, rather than *investigating* what they need: They assume that adults need to pass the GED, or to attain certain scores on the TABE or other assessment, or to progress two grade levels in their reading; they assume that the adults who come to them most need work on various skills, rather than needing other kinds of instruction. In some cases, these assumptions may be valid, or individuals may be so committed to those goals which can be attained in a remedial program that they are motivated to complete it. But there is no mechanism within a skills and drills program for asking whether this is the case; thus, the program violates the common assumption within adult education that programs should serve the needs of adults.

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[44] In the context of whole language programs for K-12 education, see the comments of McKenna, Miller, and Robinson (1990) about the lack of evaluation evidence for (or against) whole language. The entire issue of evaluating such programs is controversial; see the rejoinder by Edelsky (1990) and the book on evaluating whole language programs by Goodman, Goodman, and Hood (1989).

Another common assumption espoused by most adult educators—that teachers should have certain affective characteristics such as sensitivity and understanding—is not violated by skills and drills as much as it is made irrelevant. To the extent that the teacher becomes a manager of curriculum materials, there is no room for the sensitive teaching—teaching that seeks to understand the specific origins of student errors, the variation in the way students learn, the differences in what they seek to accomplish, and the use of several approaches to teaching in addition to didactic methods—that would require certain personal characteristics. In the extreme case, in which instructors are converted into lab managers, there is little purpose to having an individual with warmth and rapport. Of course, teachers can use skills and drills materials in various ways, as in the eclectic approaches we describe below, and, in these cases, teacher characteristics become important again. But the approach itself, with the tendency to elevate curriculum materials over the teacher and to deprofessionalize the teacher, makes these characteristics irrelevant.

Finally, skills and drills ignores the recommendation that adult programs should be flexible and varied in their approaches to learning. Except where teachers bring in supplementary materials and devise their own class-based exercises, a skills and drills program allows only one form of instruction. The extreme forms of skills and drills—the computer-based programs that allow no deviation from the prescribed set of exercises—provide little opportunity for teachers to intervene, and that chance is further diminished when computer-based programs are led by a person who thinks of himself or herself as a lab manager.

A very different challenge to the effectiveness of skills and drills for adult remedial programs is also the simplest and the most powerful. By construction, most individuals enrolled in these programs have not learned basic reading and math despite eight to twelve years of instruction in skills and drills in their elementary and secondary schooling. Why another try with the same approach—particularly in the very short programs typical in JTPA and welfare programs—should succeed when it has previously failed is unclear. One possibility, of course, is that the motivation of wanting a job is more powerful to adults than to younger students, and, therefore, skills and drills programs attached to job training will succeed where the schools have failed. However, this motivation clearly lacks the power to keep many students enrolled in remedial courses, and the separation of basic skills from job skills training in almost all remedial programs further weakens this motivation.

There is, however, one group in remedial courses for whom skills and drills might be effective. Some adults in remedial programs need a kind of refresher course: They have learned basic skills in their earlier schooling, but have been away from school-like activities for so long that they score poorly on standardized tests. For these individuals, a skills and drills approach may be a quick and straightforward way to prepare them for the GED or other tests. Indeed, administrators sometimes cite examples of students who have prepared for the GED in very short periods of time—three to four weeks—and often refer to such individuals as "brush-up" students. But they appear to be in the minority. For the vast numbers of students in remediation who have never mastered certain competencies, the notion of trying skills and drills one more time, in a limited period of time, and with the other distractions and responsibilities of adult life, seems ludicrous.

In the next section we examine some of the alternatives to skills and drills to show that alternatives for adult education exist that are quite different from and potentially much more effective than conventional practice. Our main point is not to provide a listing of alternative programs of proven effectiveness, since that is clearly impossible. Instead, we want to clarify how the alternatives differ from skills and drills, as a way of opening up for public discussion the variation in pedagogical methods.

ALTERNATIVES TO SKILLS AND DRILLS

The alternatives to skills and drills are difficult to describe precisely. In most cases, they are very much in active development; they have not yet been as carefully codified, encapsulated in textbooks, or incorporated into teacher training institutions. Those individuals who reject skills and drills do not always embrace the same methods. The alternatives have developed separately in different subjects—for example, in whole language approaches to reading, writing, and speaking; in the "process" approach to writing; and in the recent curriculum standards of the National Council of Teachers of Mathematics (NCTM, 1989)—so that their similarities are not always apparent. Finally, although the alternatives to skills and drills have a large history in theories of teaching and learning—extending back, for example, to John Dewey, and some of his predecessors such as Pestalozzi and Froebel—they do not have an extensive history of practice in the

educational system of this country.[45] While our account of other approaches cannot possibly be definitive, it is important to outline some characteristics of the alternatives in order to suggest directions that remedial programs can take.

In this section, we first outline the polar alternative to skills and drills, an approach we describe as "meaning-making." We then describe efforts we label as "eclectic," which emerge when teachers combine elements of skills and drills with practices based on meaning-making. Next, we examine "functional context literacy training," an approach that has been offered as an alternative but that proves to change only one of the assumptions underlying skills and drills. We then describe several programs that link basic skills instruction and vocational skills training in a manner close in spirit to functional context training but in ways that are quite different from skills and drills—the Center for Employment Training (CET) and the Ohio approach to "applied academics." Finally, we describe an adult program based on the principles of whole language—the most thorough example we have seen rejecting the assumptions of skills and drills.

Meaning-Making: Reversing the Assumptions of Skills and Drills[46]

In many ways, the alternatives to skills and drills simply reverse each underlying assumption. Perhaps the most important shift is to think of complex capacities—reading, writing, the ability to use mathematics, scientific competencies—not as the sum of discrete skills, but as capacities which are not readily fragmented and which can be learned only by actually practicing them. Thus, teachers within the whole language approach stress getting

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[45] The one exception may be the incorporation of developmental ideas about learning in the early childhood programs since the nursery schools of the 1920s.

[46] This section is based on our observations of various programs, as well as on our interpretations of Soifer Crumrine, Honzaki, Irwin, Simmons, and Young (1990); Collins, Balmuth, and Jean (1989); Stein (1990); Fingeret (1990); Lemke (1989); Resnick (1987); Rogoff (1990); Arnove (1989); Fingeret and Jurmo (1989); and Brookfield (1984). In addition, the citations in footnote 40, which are works describing some dimensions of skills and drills, usually contain some elements of the alternatives to skills and drills. The approach we describe as meaning-making is referred to by others as learner-centered instruction (Knowles, 1980), or active learning, or the "holistic" approach (Tomlinson 1989)—all of which are partial descriptors; see also the Freirean model for job training described by Shor (1990) and the notion of "cognitive apprenticeship" in Collins, Brown, and Newman (1986). We call this alternative approach meaning-making because of some parallels to developments in psychology, linguistics, literary analysis, and other disciplines that stress interpretation and meaning-making; see especially Bruner (1990).

students to read books and articles meaningful to them, worrying less about whether they can understand every word or provide antonyms on a multiple-choice test than whether they can extract meaning from a passage. Similarly, within the writing process approach, teachers stress getting students to begin writing, particularly writing that helps them express thoughts they consider important. However, there is much less attention to the niceties of spelling, punctuation, and grammar, which can be learned as the student progresses. Similarly, the NCTM standards stress using mathematics to make sense of phenomena around students, rather than mastering the computational techniques that are better done by calculators or computers. In each of these examples, then, the first task is to get students to read, to write, and to do mathematics—not to develop small skills that will enable them sometime in the future to do these things—and to do so with an eye to developing meaningful interpretations of issues important to students.

A corollary of the effort to get students engaged in reading, writing, and mathematics is that the exercises used must be meaningful in some important way. This notion stands in sharp contrast to the practices in skills and drills, in which reading, writing, and math exercises are dreamed up purely for the sake of a curricular sequence and are likely to be intrinsically meaningless because they are completely divorced from any of a student's concerns. What makes something meaningful varies from student to student, of course, so there is much greater emphasis within alternative approaches on having students choose the materials and assignments they work with. For those students seeking employment or advancement, work-related materials would be appropriate (see the version of functional context training we describe below); because work is of real interest to most adults, actual employment might form the basis for learning, so some programs establish work experience programs or draw on students' current employment. For students seeking admission to college-level English or social science courses, readings drawn from literature or the social sciences would be appropriate. However, in other cases, work-related materials or great literature might be completely inappropriate to a student's goals and interests. One implication is that the focus on the needs of *employers* in many recent commission reports is out of place in these alternative approaches, since, as in good practice in adult education generally, *student* needs and interests should drive content.

Another fundament of meaning-making is that learning should be social, not individual. Because reading, writing, and other forms of communication are inherently social—their purpose, after all, is to communicate with others—and meanings vary from

one setting to another, it is impossible to convey to students the nuances of communication, the variation in interpretation from one person to another, and the social content of reading and writing without working in groups. The alternatives to skills and drills, therefore, tend to place great emphasis on interaction among students—rather than on individual instruction, isolated work with computer-based instruction or workbooks, or teacher lecturing—since social interaction is an important form of learning. In turn, this means that students should learn from each other, not simply from the teacher. The importance of group interaction means that classes must meet at regular times, with an implicit social contract that all students will attend regularly because the group and its cohesiveness are important to learning—in place of the irregular attendance typical in most adult education.

The emphasis on group interaction does not eliminate individualization, but instead gives it a very different meaning. Teachers are alert for signals of student interest and for variations in learning styles, so that "individualization" means that content and teaching methods are adapted to individual students. In alternative approaches, students have many more real choices and more ways to affect content than they do within skills and drills. They can select reading and writing exercises, and they can direct the topics of discussion, for example; student-centered classes often take directions quite different from those that teachers plan, and teachers must be ready to vary their plans as the interests of students emerge and change. To be sure, individualization takes place within a group (just as it does in society at large, one might add), and so it would be inappropriate for any one student's interests to direct an entire class; even so, there are still many ways in which both content and methods can be individualized.

The assumptions about students, teachers, and their interactions are also quite different from those embedded in skills and drills. Most obviously, teachers try to build upon the knowledge and capabilities of students and to use these as resources in classrooms—in contrast to viewing remedial students merely as deficient. This is not to deny that students enrolling in adult education are relatively unsophisticated in their reading, writing, or ability to do math. Rather, the assumption is that they have the capacities to do these things well and that they have other abilities and experiences which will facilitate their improvement. As a result, there is a much greater effort in student-centered approaches to uncovering the interests and experiences of students that will motivate them to read more, write with greater facility, or understand the importance of various mathematical techniques. Furthermore, because learning takes place in group

settings with much more collaborative learning than in the individualized instruction of skills and drills, students are resources for each other and more advanced students work with their less expert peers—another sense in which they are viewed as competent and, therefore, capable of teaching others.

The role of teachers is also quite different. Rather than being managers of a set curriculum, teachers facilitate learning by constantly evaluating the strengths and difficulties of the group and of individual students and by making continual decisions about materials to bring to the course, activities to help students develop further, and ways to help students pursue their own interests. Teachers spend much more time facilitating discussion than simply lecturing. They are also more likely to model the techniques and procedures for solving problems, writing a particular kind of document, or deriving information from documents. Teachers must be much more active than in skills and drills approaches. Not only must they gather materials and activities which are tailored to the interests of students, but within the classroom they must be keen observers of students' strengths and weaknesses; they must be active listeners to take advantage of the learning opportunities that arise. They also work in other ways to make exercises meaningful; for example, in many writing courses, teachers try to get students to publish their writing as a way of establishing it as a means of communication with others, not just as an academic exercise for class.

In the alternatives to skills and drills, it is difficult to rely on a set curriculum—a text, a computer program, or a set of workbooks "off the shelf." Teachers within alternative traditions tend to develop their own curriculum materials; the need to tailor materials to the interests and goals of students, to their individual strengths and weaknesses, and to the direction of the group means that an established curriculum cannot work well.

In contrast to the tendency for skills and drills to use simple and unambiguous curriculum materials—basal readers, for example, with simplified vocabulary and short sentences, and highly stylized math problems—the materials used in alternative approaches are more likely to reflect those which students commonly see, including newspapers, work-related reading such as instruction manuals, real literature rather than basal readers, and mathematical problems from work and daily life, with the difficulties and ambiguities which normal activities have embedded in them. The simplified materials of skills and

drills are not only uninteresting and atypical of those which people normally encounter, but they also fail to provide any subjects for discussion: Without ambiguity and complexity, there is nothing for a group to debate, no point to trying to devise different interpretations, nothing to engage a class or an individual except the regurgitation of facts or the derivation of the correct answer to an arithmetic exercise. Thus, it becomes necessary for teachers to develop materials with an eye to the social nature of learning—materials that will expand rather than close off discussion.

Finally, unlike conventional approaches which *assume* that the learner is motivated, alternative approaches provide more intrinsic motivation. In part, stimulation is provided by selecting activities that are themselves meaningful and interesting to students. In addition, each student actively participates in the conduct of the class and in setting its direction; students are involved in assessment of their progress, normally in interaction with teachers, rather than having progress monitored by an external standard (e.g., a test). Finally, rather than learning individually, peers should provide support and motivation within a class, a place where students are supposed to help one another. While there is obviously nothing that any pedagogical approach can do about the external pressures which limit adult participation in education—the demands of family and employment, in particular—these alternative approaches can supply some elements of motivation, rather than assuming that students are motivated enough to complete a skills and drills program which is intrinsically meaningless.

What do we know about the effectiveness of alternative approaches compared to those based on skills and drills? We know very little—though of course we know very little about the effectiveness of any methods used in remedial education. Even to raise the question of effectiveness generates new problems because the goals of skills and drills methods—which aim to move students along a well-defined hierarchy of skills and prepare them for a standardized test such as the GED or TABE—are very different from alternative

approaches in the tradition of meaning-making.[46] The purposes in the meaning-making approaches may vary with students and teachers and may also be hard to measure. However, we note that some of the major drawbacks now present in adult education programs—the motivational problems that lead to high dropout rates, the fact that many adults find materials boring and irrelevant to their concerns, the neglect of needs as students articulate them, the irrelevance of teachers, and the absurdity of trying skills and drills in short programs for students for whom it has previously failed—are all remedied to some extent in alternative approaches. If we are forced to judge the effectiveness of pedagogies on *a priori* grounds, there is a good case that can be made for turning toward methods based on meaning-making.

The Eclectic Approach to Remediation

Both in responses to our questionnaires and in our visits to selected programs, several administrators of remedial programs articulated an eclectic approach. Most often, such programs begin with a standard curriculum—a series of texts recognizable as skills and drills materials or a conventional computer-based instruction program—and then elaborate it with supplementary reading, related writing assignments, oral presentations, projects to send students out into the community or to their employers and to report back to their classes, role playing, and a variety of other activities quite different from those of skills and drills. Part of the eclectic approach is to use a variety of formats—classroom discussion, individual drill in workbooks, computer-based instruction, one-on-one tutoring, and sometimes audio materials—in an effort to present material to find out how individual students learn best, and to keep up the interest of students. The teachers in such programs articulate a process of constant search—for materials that students will like, for alternative approaches that work for their students, and for ways of presenting material that seem unfamiliar, abstract, or academic to their students—that is quite pragmatic rather than motivated by any particular theories of teaching. At the same time, these teachers are clearly driven by a concern with outcomes and by a sense that their students are individuals with different interests, needs, and external problems.

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[46] See, for example, the interchange about evaluating whole language programs in McKenna, Miller, and Robinson (1990) and Edelsky (1990).

In our estimation, eclectic approaches are more common in community college developmental programs than in adult schools or programs supported by JTPA and welfare programs. Of the half dozen programs we interviewed that mentioned eclectic approaches, all but one were in community colleges. The community colleges we visited and others we interviewed by phone[47] had elements of eclectic approaches, including labs as well as classrooms, individual instruction as well as discussion methods, writing as well as reading and math, and several levels of courses. Within the literature on developmental education, the dominant conventions of good practice uniformly suggest the need to use varied approaches, including those that engage students more actively; and one view within community colleges specifically attacks skill-based approaches and narrow conceptions of functional literacy and argues instead for whole language methods, the integration of remedial education with vocational and academic content areas, and other practices drawn from meaning-making (e.g., see Bojar, 1982; Luvaas-Briggs, 1983; and McGlinn, 1988). This is not to say that all community colleges have moved away from skills and drills, since some of them have minimal remedial programs and some are probably indistinguishable from ABE. However, community colleges seem to have more resources than adult schools do and to have a more open and experimental attitude toward teaching; the instructors in community colleges are more likely to be full time and to be dedicated to teaching adults, rather than part-time instructors who have no special preparation in adult education.

When teachers and administrators describe an eclectic approach, it is impossible to ascertain the balance of skills and drills and meaning-making. Even when visiting programs, it is difficult to determine the balance from a day's visit; to see what students experience over the course of an entire program, extended observation would be necessary—something that has rarely been done in remediation programs (for an exception, see Hull, 1991). From observations during our visits to programs, however, it is clear that the balance of elements is crucial to the student's perception of purpose; an exercise drawn from whole language or writing process approaches embedded in a program that is otherwise based on skills and drills is not necessarily effective. One clear example came in a program for youth sponsored by JTPA, which included twenty minutes of sustained silent reading and a period of journal writing—two favorite exercises of those espousing whole language approaches (e.g., see Soifer, Crumrine, Honzaki, Irwin, Simmons, &

[47] Based on evidence provided by LARC (1988a, 1988b, 1989a, 1989b), we identified a number of community colleges in California that are considered exemplary and that have high test score gains; we visited two of them and interviewed four others by phone, as described in Appendix B.

Young, 1990)—in a curriculum otherwise indistinguishable from a conventional high school curriculum. The students were paying little attention to either their reading or their writing, and they seemed to treat these periods as lulls in an otherwise jam-packed schedule. In another example, the instructor (or lab manager) of an extreme skills and drills computer-based JTPA program for adults gave the students a writing assignment based on "clustering," an activity in which students throw out clusters of ideas in order to find a focus and an organizational form for a writing task—an exercise drawn from writing process methods. The students greeted the assignment with obvious dislike, and the instructor had to add that the only excuse she would accept for missing class would be a note from the coroner's office. Our interpretation is that, in a program where students have no choice about what they do and where reading and writing are treated as skills which other adults say must be learned, students will view free reading and writing as coerced assignments, not as exercises that will help them explore issues of concern. (In addition, there is the obvious question of how important a writing exercise can be if it takes two hours per month out of about eighty hours.) Skills and drills is an internally consistent approach to teaching, and meaning-making can also be viewed as an internally consistent system with the assumptions of skills and drills reversed; as a result, mixing elements from different approaches may lead to inconsistent assumptions and practices that undermine rather than reinforce one another.

In our view, considerably more observation, analysis, and evaluation are required to determine what eclectic approaches work. However, we interpret the development of eclectic programs as a hopeful sign—as a signal that teachers are dissatisfied with conventional teaching methods and are actively experimenting with alternatives more appropriate to the needs of their adult students.

Functional Context Literacy Training

One approach that has been promoted as an alternative to conventional remediation programs is functional context literacy training. Most closely associated with the work of Thomas Sticht (Sticht, et al., 1987; Sticht & Mikulecky, 1984; Sticht, 1990), functional context training seeks to "integrate literacy training into technical training" on the grounds that learning basic skills is easier in the context of vocational training where such skills

have obvious application (Sticht, et al., 1987, p. 107). The proponents of functional context literacy training argue that there are motivational advantages as well because trainees can see the purpose of learning basic skills related to their future occupations; therefore, dropout rates should be lower than in conventional remedial programs. In terms of the assumptions of the standard approach, functional context training replaces the decontextualized materials of skills and drills with materials drawn from a specific context—in this case, a particular occupation.

While functional context training has an obvious appeal and has made many converts (and some enemies),[48] the evidence in its favor is limited. The programs evaluated so far have been in the military, and their applicability to civilian training is unclear. The evidence seems to show greater increases in job-related reading among those individuals in certain functional context programs compared with those in general literacy programs, while the gains in general reading scores are comparable. However, there are several possible explanations for this pattern,[49] so the superiority of functional context approaches over others is unclear. The appeal of the functional context approach must, therefore, rest on the logic of the programs themselves, rather than evaluation results.

While it is sometimes difficult to ascertain what functional context programs do, several principles underlie the approach. One is "to try to make the instruction as meaningful as possible to the learner in terms of his or her prior knowledge," relating new

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[48] Among the converts see, for example, several of the authors in *Literacy and the Marketplace* (1989); Strumpf et al. (1989); Askov, Aderman, and Hemmelstein (1989). For criticisms of functional literacy—that is, the notion that literacy should be instrumental to some narrow and often utilitarian goal—see Levine (1986) and Kazemek (1985).

[49] See the results summarized in Figure 5 of Sticht et al (1987), widely reported in other work by Sticht and his colleagues. They are based on pre- and posttests with various control groups. All results are converted to grade-level equivalents. The job-related reading programs increased both job-related reading scores and general reading scores, but so did the general literacy programs of both the Air Force and the Army; and the scores of those without literacy training—who underwent several weeks of technical training, which may itself have been a powerful literacy program—also improved. In these results, it appears that gains in job-related reading were largest in the job-related reading programs. However, without information about the standard errors of test scores, about possible selection effects (since participants in these programs differed in their initial scores, and probably on other characteristics as well), and about the intensity and content of programs, it is difficult to conclude that any one approach led to larger gains than any other. Thus, it remains possible, based on this evidence, that any approach to instruction increases scores, and the advantage of functional context methods over others remains unclear. Elsewhere (p. 121) this volume summarizes evidence from a functional context program called Jobs-Oriented Basic Skills (JOBS), where attrition after thirty-three months on the job of JOBS students was 6.8 percent compared to 14.8 percent for a comparison group; but higher attrition at an earlier date among JOBS trainees and a higher initial level of education means there are complex positive selection effects influencing these results.

information to old knowledge. A second is "to use, as much as possible, 'real life' situations, tasks, and materials that the learner will encounter after training or education as part of the educational program, and to make this relationship clear to students," to clarify the relationship between instruction to a future goal and to promote the transfer of learning from the classroom to the next setting in which it will be used (Sticht et al., 1987, p. 122). Another principle underlying functional context literacy training is that "skills and knowledge are best learned if they are presented in a context that is meaningful to persons" (Sticht & Mikulecky, 1984, p. 33)—a view that explicitly rejects the decontextualized approach of skills and drills.

Functional context training also draws on the observation that the knowledge and skills needed for the workplace are different from those required in school-like exercises (Mikulecky, 1983; Resnick 1987; Sticht, 1987; Venezky, Wagner, & Ciliberti, 1990). By almost any standard, the capacities required in work are different from and more complex than those taught in basic skills and drills programs; the contention, in reports such as *Workplace Basics: The Skills Employers Want* and *The Bottom Line: Basic Skills in the Workplace*, that successful workers must have problem-solving abilities, take responsibility, interact effectively with others, and communicate clearly implies that the simple cognitive skills taught in most schools and in most adult education programs are insufficient. By embedding learning in work-like tasks—or even in actual employment when learning is conducted within work experience programs—functional context training promises to eliminate the disjuncture between the skills required on the job and those taught in convention approaches.

In sum, functional context approaches replace the practice common to skills and drills of using decontextualized materials with a particular context—most often job-related—from which reading materials, writing exercises, and various non-cognitive skills (e.g., interpersonal skills) are drawn. However, these approaches do not consciously change the other assumptions underlying teaching methods, so specific functional context programs vary considerably. Some of them represent substantial departures from skills and drills. For example, in the second strand of the Functional Literacy (FLIT) program, developed for the Army, trainees read a simplified three hundred to four hundred word passage drawn from a specific occupation; then they translated the reading into another form—pictures, classification tables, or flowcharts—and discussed their representations, an activity close to whole language approaches with their efforts to use writing and oral

presentations as well as reading. The electronics technician program described by Hickey, Howard, and Sticht (1987) suggests (as optional activities, to be sure) that instructors encourage students to explore electrical devices on their own, to share these with classmates, and to read about electronics outside of class. The curriculum itself asks students to reconstruct rather than to simply regurgitate instruction, though other exercises are similar to skills and drills. Similarly, Sticht and Mikulecky (1984) describe a functional context program designed to train word processors:

> Assignments were planned to integrate language and machine skills. Much of the classroom simulated actual job demands. Students would compose business communication that other students would edit and later produce in final form on word processing equipment. A good deal of the work involved using actual business communication that was handwritten in rough draft form with editing notations. The job simulation training that integrated language and machine experience ranged from about 5 percent of assignments the first week to nearly 100 percent in the final weeks. Class assignments attempted to replicate the time constraints present in business performance. Though much of the work was done on an individual level, some work made use of worker teams, which again replicated workplace conditions. (p. 13)

Based on this description, the program incorporated a number of elements not normally associated with skills and drills: the use of materials that were inherently meaningful in the sense that they were drawn from actual work settings; interaction among students in editing and the use of work groups; and job simulation, which introduces modeling as a form of learning as well as the behavioral and interpersonal dimensions of work. Although there may have been some elements of skills and drills within the program, the basic approach appears to be a more eclectic one, incorporating many elements of meaning-making, in which the simulation of actual job demands drives the program rather than a sequence of small skills. Finally, the programs we describe in the next section—the Center for Employment Training, the applied academics initiative in the Ohio schools, and the Eastern Michigan University Workplace Education Academy—also use curriculum materials drawn from vocational skills training, occupational materials, or actual work that students perform; and they use these materials in ways quite different from skills and drills.

However, other examples of functional context training preserve many elements of skills and drills. In one case, Sticht identified two reading tasks: reading to do, which is composed of 186 subtasks; and reading to learn, which is composed of 143 subtasks (Sticht, 1979). In another example, again drawn from the military, Philippi (1989)

recommended a process of task analysis: identifying key tasks and concepts, writing learning objectives, categorizing job tasks according to the level of reading required, and selecting materials to teach each job-related reading task.

Both approaches suggest the fragmentation of capacities into small subskills, as skills and drills methods tend to do. The literacy program designed to teach reading to do and to learn "provides extensive drill and practice in locating and extracting information from job-reading materials. Each module includes a pre- and a posttest. Each module consists of material and numerous worksheets requiring that the person performs the tasks indicated by the module name" (Sticht 1979, p. 129). In one strand of the Army's FLIT program, described as a "modular, self-paced, mastery-based program of job reading task training" (Sticht et al., 1987, p. 114), individuals were given materials drawn from one of six specific occupations. They were also given drill and practice in using a table of contents, an index, tables and graphs, and a manual to look up facts; in following instructions; and in filling out forms. In the "reading for learning" strand, "materials were written at a lower difficulty level than those encountered in job training and were developed to give students a knowledge base for processing written texts common to their jobs. These passages were written without redundancy and elaboration" (Sticht, 1979, p. 122). In other words, the texts used were not materials that would be used on the job, but simplified versions written specifically for the program; the elimination of redundancy and elaboration, the criteria for developing basal readers used in most elementary schools, means that they lack the ambiguity and complexity that an individual will find on the job. The purpose, to be sure, is to help students learn to read. Justifying the simplification of texts ties in with this purpose; however, whether these simplified materials prepare individuals for the complexity of working under normal working conditions is unclear—just as the ability to synthesize fragmented subskills presented in the skills and drills methods is unclear.

These examples clarify that in some cases functional context literacy training follows many of the practices of skills and drills. The tendency to base programs on minutely detailed lists of job requirements is identical to the approach within skills and drills of breaking competencies into collections of specific skills. The exercises in these programs—drilling and practicing with worksheets and with pre- and posttests, looking up facts, and filling in charts—are common in skills and drills. Functional context programs vary somewhat, however, in that the reading materials are drawn from specific

occupations. The development of simplified reading materials is similar to the practice in skills and drills of using simplified, shortened material written specifically for the remedial program. The assumption of student deficiency, so common to skills and drills, is also true in at least some functional context programs: Sticht (1990) describes the usefulness of the approach for "lower aptitude, less literate" young people, and the very first sentence of a functional context program for electronics technicians states, "The goal of this course is to teach introductory electronics technician's knowledge and skill to students whose basic academic skills (reading and mathematics) and electronics 'aptitude' are lower than ordinarily thought necessary to study electronics" (Hickey et al., p. 1). Rarely do the proponents of functional context training elaborate the role of teachers, their special characteristics, or their interactions with students; while teachers may be crucial to the success of functional context methods—because, for example, they must be familiar with the context that motivates the programs—in other respects one can only conclude that teachers need not change the way they engage students or approach curriculum materials.

Within some functional context programs, the conception of "context" seems to be that curriculum materials and exercises are drawn from particular occupations. However, this is a very different and narrower conception of context than other writers attacking decontextualized learning have used, for whom a context includes the social norms and expectations, the personal relationships, the purposes in reading and writing, and other aspects of the social setting in which reading and writing occur—not merely the origins of texts and learning exercises (e.g., see Scribner & Cole, 1981; Heath, 1983; Erickson, 1988; Street, 1984). To be sure, other functional context programs do embrace this broader conception of context and incorporate cooperative learning, role play, job simulation, and other exercises designed to explore the social setting of work. Once again, functional context methods can be used in very different ways; even the basic conception of context can be interpreted in ways that either ignore the social construction of job requirements (as skills and drills does) or incorporate this assumption critical to meaning-making.

In sum, the functional context approach does overturn one of the fundamental practices of skills and drills—divorcing instruction from any possible context in which competencies might be used. However, in other respects, functional context training is compatible either with skills and drills or with meaning-making, or with eclectic approaches drawing from both pedagogical approaches. It is a mistake, we think, to interpret

functional context literacy training as a complete replacement for conventional remedial education since it replaces only some of the basic assumptions underlying skills and drills, and can too easily lead to programs that look like conventional remediation in almost all their details.

One final limitation of functional context training is worth noting. As a way of providing both context and motivation for individuals enrolled in vocational education and job training or in other employment-related programs, the notion of using job-related tasks and materials is wholly appropriate. However, for a broader range of literacy and remedial programs *not* connected to employment, functional context approaches may not be appropriate because these approaches assume that employment success and advancement is crucial to those enrolled—rather than asking them about their reasons for enrollment. That is, the context is specified by people other than the learner, leading to the possibility that learners will see the context as imposed and the program as uninteresting (Jurmo, 1991). In a variety of adult education, developmental programs, and even workplace literacy programs sponsored by employers (like the Workplace Education Academy profiled below) other motives may dominate—parental, avocational, or political. Indeed, some adult students seek a respite from work, so work-oriented instruction may be the last thing they want.[50] Again, it is inappropriate to view functional context approaches as a replacement for all forms of remedial and adult education.

Programs Integrating Basic Skills and Vocational Training

While functional context literacy training has received widespread attention, there are very few programs that attempt to integrate basic skills or academic instruction with job-related training. In our survey of providers in twenty-three regions, only two providers out of roughly seventy-five that we interviewed responded that they made any conscious link between their remedial component and job skills training. In a few instances, providers claimed to connect the two, but it became clear that they were referring to concurrent enrollment—a practice in which individuals are enrolled in remediation and in vocational education at the same time but with each component remaining independent from the other. "Concurrency" may have some motivational advantages over sequential programs if

[50] Personal communication, Rena Soifer, Eastern Michigan University Workplace Education Academy.

students are motivated to continue in remediation because of the interest they have in the vocational component. (Some community colleges have reported moving to concurrent enrollment to reduce dropout rates in developmental education, and California is experimenting with "concurrency" in both its welfare-to-work effort and in 8-Percent programs.) However, concurrent enrollment does not necessarily use work-related materials or settings as the basis of remediation, as functional context training would require, nor does it integrate vocational training and academic instruction in any other way.

However, a few programs provide remediation, or basic skills instruction, in the context of vocational training *and* in ways quite different from skills and drills. These examples are instructive because they indicate how it might be possible to use work as the basis for other kinds of education. But they also suffer from some notable limitations, stemming again from their connection to employment. Linking remediation to job training proves to be a two-edged sword, then, and it is important to identify both the power and the limitations of this approach.

Center for Employment Training, San Jose

The Center for Employment Training (CET), with headquarters in San Jose, is a CBO providing job training in about thirty other cities in the West, most of them in California. Like most CBOs, CET survives by combining a number of funding sources, though JTPA provides about eighty percent of its revenues for vocational training (CET, 1989). Part of CET's philosophy is to incorporate comprehensive services, including vocational skills training, remediation, language instruction for non-English-speaking individuals, and job placement services. All basic skills instruction is provided within the context of vocational training rather than being a separate component. CET was dissatisfied with the conventional arrangement (classes called "feeder 1, 2, and 3") requiring remediation before skills training, a sequence that caused high dropout rates. The integration of basic skills with vocational skills training has recently been identified as the reason for its success, compared to other programs serving minority female single parents, in a well-designed evaluation of four such programs (Burghardt & Gordon, 1990). While

this evaluation cannot formally support this conclusion,[51] it is apparent that this is a more effective program than many others operated by JTPA.

Our visit to CET's San Jose program clarified the way in which integration takes place. Individuals applying to CET first tour the different programs available in electronics assembly, custodial occupations, food service, maintenance, printing and graphics, shipping and receiving, office skills, child care, food service, machining, precision sheet metal, and automotives. They then elect a program and take an assessment test; the results are used for diagnosis only, not as a barrier to entering particular programs. Each program operates on an open-entry/open-exit basis, with new students entering every Monday; since it is competency-based, students may exit whenever they have mastered a set of competencies. While the time to completion varies, time in the program averages around six months.[52]

Within each program area, there are typically two instructors and twenty-five to thirty students. The instructors, most of whom come from industry, teach both vocational skills and remediation, so that basic skills instruction can easily refer to the job skills being learned in the program. Typically, workshops are next to classroom areas, so it is physically easy to move between the two as well; for example, a few teachers mentioned that students having trouble with a concept in the classroom would be sent to the workshop to work with materials (e.g., in machining), and then move back to the classroom. There are a few "pull-out" classes, one in ESL and one a GED preparation class, that are taught independently of vocational skills training; these follow conventional skills and drills formats. Otherwise, however, everything is taught by the two instructors within the single workshop/classroom space.

Apart from the fluidity of movement between basic skills and vocational skills, the CET program is remarkable for the variety of different kinds of instruction that goes on. Teachers introduce new job skills and some basic skills by modeling rather than lecturing, using the "show and tell" methods common in vocational education.[53] Students then spend

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[51]The evaluation shows that CET has been more effective than three other programs, but it cannot identify which of the many differences among programs are responsible.

[52] For JTPA, this is a relatively long program. Many on-the-job training programs last as little as six weeks, and classroom-based skill programs rarely last longer than fifteen to twenty weeks.

[53]For a detailed account of the teaching methods that can be used to teach generic skills as well as job-related skills, see Stasz, McArthur, Lewis, and Ramsey (1991).

time in the equivalent of a workshop—practicing assembly in the electronics program or operating printing machines, for example. The teachers we observed team-taught rather than specializing in any way, increasing opportunities for one-on-one instruction for students who had problems. Most programs also perform real work: The print shop prints all the material required by CET and contracts for small print jobs; the food service program operates the cafeteria; the child care program operates a center for the students' children as well as for children from the community; and the custodial program does all the cleaning required for CET. This provides yet another form of learning both job skills and job-appropriate behavior. Basic skills instruction involves some lecture and conventional worksheet exercises, but also a good deal of one-on-one instruction as students come up to instructors when they are having problems; the interaction between students and teachers is typical of that which is found in vocational classes—where teachers circulate and provide highly individualized guidance to students asking for help—than conventional lecturing. Language instruction is clearly an important component: All of the instructors are bilingual in English and Spanish, and the majority of students are Spanish-speaking. English is stressed within CET, and the importance of English to employment is constant; in one classroom, for example, a large sign proclaims: "In this class we speak English. English means jobs!" In practice, however, students and instructors move between Spanish and English as necessary for both job-related and general uses of language, making the program bilingual. Finally, there is a heavy emphasis on job-related behavior: Students punch in and out as they would on the job; the classroom rules (like those pertaining to coffee breaks) mimic those in employment; and the real work performed within each program provides additional opportunities for instructors both to model appropriate behavior and to require such behavior of their students.

Within this variety of instructional methods, there are—not surprisingly—many exercises that follow the patterns of skills and drills. In one class, students were copying sentences from the blackboard; a second class was reviewing long lists of homonyms; and worksheets of arithmetic problems were similar to those in conventional remedial classes. However, these elements of skills and drills do not dominate the program by any means, and the program as a whole shares few of the assumptions—about the nature of learning, teachers, students, or curriculum—underlying skills and drills. Furthermore, because of the close connection between job skills training and basic skills instruction, it is plausible that students interpret these drills differently than they would in a conventional remedial program. They understand the importance of basic skills to future occupations, and they

are being led in skills and drills by the same instructors who teach them in quite different ways in other parts of the program.[54]

With the many advantages of CET, there remains an obvious limitation. The funding constraints of JTPA and the other programs that support CET limit the program to providing relatively short periods of training. As a result, CET—like other JTPA programs—prepares individuals for entry-level jobs in relatively low-skilled positions such as child care workers, secretaries, electronics assemblers, janitors, and food service workers. Quite consistently, instructors reported that students go into entry-level positions at $6.00 to $8.00 an hour, above the minimum wage for unskilled work but probably not enough to earn one's way out of poverty.[55] For the academic skills taught in the program, the focus on moderately skilled occupations means that there is little need for very advanced competencies: The math required in these occupations is rarely more complex than arithmetic with fractions and decimals; the reading rarely rises above short passages read for content; and the writing is largely concerned with filling out forms. The focus on entry-level jobs, then, while necessary given the limitations of JTPA funding, constrains the academic competencies taught in the program to very basic skills. Although instructors at CET hope that individuals will be able to move up job ladders after they gain entry-level positions, they are not being prepared for more advanced positions. If job mobility requires more advanced occupation-specific skills or academic capacities, they will have to be learned on the job, or an individual will have to return to school to master them.

Ohio's Applied Academics Program

Although Ohio's Applied Academics program is aimed at secondary vocational education students rather than adults, it illustrates many of the possibilities—and the

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[54] However, there may be substantial differences between the San Jose program and other CET programs. The satellite program in Oakland was dominated much more by skills and drills methods when we visited it, perhaps because it lacks the work components present in the San Jose site. Thus, the CET "model" in practice varies in the balance of skills and drills and other elements.

[55] Full-time work at $6 to $8 an hour leads to annual earnings of $12,000 to $16,000, compared to the poverty level of $7,500 for a single individual and $12,000 for a family of three in 1990. However, most low-skilled workers suffer from irregular employment, so annual earnings would typically be lower. The Rockefeller Foundation evaluation of CET indicated that minority females completing the CET program earned an average of $416 per month, or $4,992 per year with full-time work—and that this was insufficient to reduce welfare income significantly. See Burghardt and Gordon (1990), Appendix Table 2.

limitations—of integrating remediation with vocational skill training.[56] In many of the area vocational schools and in a few of the comprehensive high schools, academic teachers teach applied academic courses in place of conventional math, English, and science.[57] For example, a math teacher will teach a section of applied math for students in an electronics program, concentrating on the specific kinds of math—extending in this case to algebra and some trigonometry—required in electronics and for the specific applications they need in their vocational labs; different sections of applied math are developed for each of the other vocational subjects. Similarly, applied communication classes concentrate on the reading, writing, and oral capacities—including abilities to read specialized diagrams and documents—required in specific vocational areas. In addition, some applied science classes focus on the science required in such areas as health and animal care. Teachers develop all curriculum materials, since they must tailor the content to the particular requirements and sequence of each vocational subject.

All academic teachers in the program spend at least one period each week in the appropriate vocational class so that they are familiar with the content, vocabulary, and methods of the specific subject. The result is that teachers in the applied academic classes can reinforce lessons from the vocational classes at the same time they are providing instruction in academic competencies. In some schools, vocational and academic instructors teach together, providing the kind of seamless instruction that we observed at CET. We also observed a great deal of innovative teaching of academic material, replacing the conventional skills and drills format with approaches closer to the activity-based methods of good vocational education.

However, the Applied Academics program in Ohio suffers from the same limitation as the Center for Employment Training (CET). The content of each applied academics

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[56] Our examination of the Ohio program was conducted as part of a study examining high school programs that integrate vocational and academic education; see Grubb et al. (1991). There are obvious conceptual links between remedial programs in vocational education and job training programs and the efforts within high schools to integrate vocational and academic education, particularly where integration efforts are essentially remedial.

[57] It is crucial to point out that the Ohio program does not use the better known applied academics courses—Principles of Technology, Applied Academics, and Applied Communication—developed by the Council for Occupational Research and Development (CORD) and the Agency for Instructional Technology (AIT). In fact, the essence of the Ohio program is that vocational and academic teachers work together to develop curriculum materials; the Ohio teachers we interviewed denounced the notion of using curriculum materials "off the shelf," and they found the CORD/AIT materials inaccurate and too general for particular vocational areas.

class is related closely to the requirements of a specific vocational program in order to assure student motivation and to provide a context for academic material—precisely the logic of functional context training. But because these programs are defined as preparation for entry-level jobs in relatively low-skilled work—as animal care workers, child care workers, auto body mechanics, carpenters and cabinet-makers, for example—the academic content is correspondingly elementary. While electronics, machining, and drafting require algebra, geometry, and some trigonometry, the majority of these occupations require little more than arithmetic; while secretaries must master complex rules of grammar, punctuation, and sentence construction, most entry-level occupations require little writing aside from filling in forms. Moreover, a good deal of applied communication involves oral communications rather than the high-level reading we conventionally associate with high school English courses. As a result, many of the applied academics courses in Ohio are essentially basic education or remedial courses, even though they are well-taught and well-integrated with vocational skills training in the manner of functional context training. What the program in Ohio has not done—what very few high schools or job training programs have done—is to provide vocational preparation for a range of jobs or for job clusters, and then to use the range of capacities required in such clusters to motivate academic instruction that is more than simply remedial.

A Whole Language Approach: The Eastern Michigan University Workplace Education Academy

One adult education program based explicitly on the principles of "whole language" is the Eastern Michigan University Workplace Education Academy, located in several auto plants in Michigan.[58] The program, funded by the union and the firms, conducts "courses" lasting eight weeks and meeting for two 90 minute sessions per week. These are not courses in the sense of standardized subjects taught in conventional high schools and colleges, however; they include topics such as Reading and Writing Improvement, Famous Black Americans, Map Reading, Technical Reading and Writing, Women's Issues, Places

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[58] The principles underlying the program have been presented in Soifer et al. (1990). However, this volume—which is intended to be a manual for adult educators—does not describe classes in any detail (though it does present the logic behind classroom practice) and does not emphasize the sharp differences between its philosophy and methods and those of more conventional adult education. Our description is based on a two-day visit in August 1990.

in the News, Organic Gardening, Business Japanese, Reading to Understand, Problem-Solving Strategies, and Smart Money. The staff develops course topics on the basis of interest expressed by workers, on developments from previous successful courses, and on topics related to employment needs such as plant safety and the math necessary for statistical process control. In developing courses, the teachers try to stay alert to the needs of workers. One teacher noticed that students had difficulty reading anything on a map (e.g., for using the grid system to locate cities and reading mileage scales); she then developed a map-reading course. The courses are advertised to workers on the basis of communicative competencies, not achievement of specific grade-level equivalents or passage of the GED. The flyer for Reading and Writing Improvement asks: "Would you like to gain a better understanding of materials you read? Express your ideas on a variety of topics? Organize your thoughts more easily on paper?" The flyer for "Ford: The Man and the Machine" similarly stresses communicative competencies, not simply information: "Would you like to read articles about Ford: the man, the machine, and the company? Learn strategies to improve your reading comprehension? Gain the ability to organize your thoughts more easily on paper?"

One fundament of the program is the whole-language practice of including reading, writing, listening, and speaking in all courses. Therefore, courses are never simple recitations of facts or drills on specific skills, but engage students in a variety of activities so that they are actively reading, writing, and participating in discussions. There is a basic reading-discussion-writing format to each class. Students read silently for twenty minutes at the beginning of each class, and then keep records of their reading. Discussion takes place around the readings and the writings that students do; the classrooms are set up with tables seating six to eight students to promote discussion, cooperation, and small group work. There are no individual carrels which might separate students—reflecting an assumption that learning should be collaborative and interactive and that the diversity of students' responses to the course content constitutes a resource.

Writings are developed around the students' interests, often emerging from discussions and reading. A crucial element is that teachers help students get their writing published, so writing is read by others and has some communicative purpose, rather than being an academic exercise. Student writings have been published in local newspapers, union newsletters and company bulletins, and their ideas have been put into letters to

vendors and organized into presentations to employee groups and management meetings. Collections of student work are kept in the academy for others to read.

Another basic assumption is that language must be meaningful to students. The program does not rely, therefore, on basal readers or the kinds of special-purpose textbooks and computer programs often used in adult education programs, with their short, artificial, and trivial reading passages. Instead, the materials are those which students face in their normal lives, both on and off the job. Materials vary in their complexity, to be sure, but they include the variety and ambiguity of "real" reading and provide the basis for extended discussion, elaboration, and further writing. Students also choose many of the materials they read from books and magazines collected by teachers and available for both class and home use. The conception of individualization in this program is, therefore, very different from that embedded in skills and drills; individualization within the academy refers to students having a voice in what they learn and when they learn it at every stage, from electing particular courses, to deciding what to read and write, to monitoring their own progress, to assessing their progress near the end of the course.

Unlike many adult education programs, students do not take an initial test to assess their abilities, and no individual is denied access to a course because of low achievement. To be sure, individuals with minimal reading skills may read relatively simple texts or listen to audio tapes while reading, but every course includes individuals of all achievement levels. An apparently banal statement—"everyone must be viewed as a reader" (Soifer et al., 1990, p. 25)—is enormously revealing about the program's philosophy that adult education should concentrate on the assets and not the deficits of individuals, and use these assets to stimulate further development. In the case of writing, for example:

> Language experience simply means recalling experiences, forming ideas, and developing thoughts on a topic, and then expressing them, first orally and next in writing. This process is aided by the use of thought-provoking topics, articles, and stories, which trigger discussion and thinking, which, in turn, lead to writing. Adults who perceive themselves as nonreaders and nonwriters (or who are perceived as such by the teacher) can succeed with writing activities based on their experience. Because the focus is on assets rather than deficits, the learner realizes he or she is a capable person, not a failure. By building on the connections between writing and reading, that is, by using learners' writings as the basis for learning to read, individualization is achieved more readily than by trying to match learners with a packaged program in the hope that the materials will meet their needs and, what's more, satisfy their interests and capabilities. (Soifer et al., 1990, p. 18)

Along the same lines, assessment at the end of a course is based on portfolio methods: Teachers review folders of students' work to help them evaluate their own learning and help them decide what to do next—a highly individualized procedure (unlike conventional standardized tests) that allows students to express what they have learned, rather than risking the discovery that they have failed once more to pass an externally imposed test (Goodman, Goodman, & Hood, 1989).

The academy programs do include GED courses for those students who want to pass the GED for their own reasons. However, the GED is not of vital importance—unlike the case in many adult education, JTPA, and welfare programs, where it has become the Holy Grail driving all other efforts. Furthermore, preparation for the GED is taught in much the same way other academy courses are taught, applying whole language principles (Soifer et al., 1990, chap. 3). While the course uses a GED preparation book as the text, teachers engage in extensive discussion, augment workbooks with additional materials, and set aside time for independent reading. Writing is also incorporated into all phases of the GED course, since a writing sample is part of the GED. Teachers specifically address test-taking strategies to get over the anxieties students have about standardized tests. They also have students examine the holistic scoring used in the writing sample and take on the role of scorers for class writings, both to give them more opportunities for writing and to let them "in on the secret" of how the test works. The GED course provides an illustration that even programs driven by standardized tests can be elaborated with related discussions, writing exercises, and meta-cognitive teaching, rather than teaching only those skills that will be tested.

The academy programs have made several efforts to generate courses based on the employment needs of their students. Given the assumption of good practice in adult education that courses and materials should meet the needs of students, the incorporation of job-related material in such programs should be a natural development.[59] However, the two firms involved have been reluctant to cooperate in developing such job-related content, even though they provide financial support for the academies. For example, the academy

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[59] This motivation for incorporating work-related material seems quite close to the contention within functional context training that materials should be closely connected to work materials and the skills necessary in employment. In practice, it might be impossible to distinguish the two approaches. However, meaning-making approaches stress the needs of *workers* while functional context approaches tend to stress the needs of *employers*—for example, by asking employers about the skills necessary in particular jobs.

taught an industrial math course to prepare individuals for the statistical process control (SPC) course taught in one of the firms, and also developed a safety course to augment a company course on safety. However, the firm provided very limited support to alert workers about the pre-SPC math. The academy personnel were not informed about a mandatory class on safety training nor about an increased emphasis on employee health practices, and so were unable to cooperate with the firm in developing their own safety course. More generally, there has been no provision for released time for academy courses. The most obvious forms of cooperation—in which company officials would ask academy personnel to establish courses in areas where they see deficiencies or in cases where there will be changes—have apparently never taken place. The lack of cooperation seems strange given the volume of complaints from the business community about the need to elevate the skills of the labor force; it suggests an opportunity lost for both the employers and the employees. It illustrates the difficulty even well-intentioned programs may have in incorporating work-related materials into their curricula.

Finally, the teachers in the academy programs are quite different from those in most other adult education programs. They are full-time teachers, rather than holding other jobs and teaching on a part-time basis. They are committed to adult education, and do not consider their positions to be unimportant or low status. Unlike teachers in some other programs we visited, who seemed to think of adult education as a necessary evil given the failures of high schools and the deficiencies of students, academy instructors interpret adult education as positive because of its power to expand the capacities of students. They also think highly of their students, with little groaning about skill deficiencies typical in many adult education programs. Staff selection and development are a crucial aspect of the Academy Model (Soifer et al., 1990, chap. 6), rather than an aspect which is ignored or dismissed with easy language about the need for teachers to be sensitive and caring. Teachers are absolutely central to the academies: They devise the curriculum rather than using materials that come from elsewhere. Also, the interactions, with students and among students, that are the heart of the whole language approach, place enormous responsibilities on teachers.

In every way, then, the academy program differs from the assumptions of skills and drills—in assumptions about learning, students, teachers, interactions among students and between students and teachers, the nature of the curriculum materials, and about individualization. To be sure, the program cannot always achieve the goals it sets for itself.

The model of group work—which stems from the assumption that literacy education is a social activity requiring interaction rather than an individual activity—is not completely implemented, and the academy programs work with both groups and individual students.[60] The cooperation with the auto industry is imperfect, restricting the ability of the academy to incorporate work-related courses and activities. Recruitment remains a major problem partly because workers have busy schedules, they do not get release time for academy courses, and they have to be sold on the value of the academy. Despite these problems, the academy is the closest example we have seen of an approach to adult education completely different from skills and drills—one which clarifies that such programs can be developed, that they are coherent, and that they can be effective for their students.

Some Conclusions: The Varying Ambitions of Remedial Education

In surveying alternatives to skills and drills, one striking finding is how much they vary in their ambitions—and, therefore, in the sophistication of what they provide their students. At one end, the narrowest forms of functional context literacy training prepare individuals to read narrowly defined job-related material in the most efficient way possible, as well as to do the simple math associated with relatively unskilled jobs. Similarly, although the Applied Academic programs in the Ohio schools and the integrated approach of CET use very different approaches from skills and drills, they still focus only on those capacities necessary for entry-level jobs, which are usually quite basic indeed. At the other end, developmental education programs in community colleges aim to prepare students for college-level work in both vocational and academic subjects, in theory providing a complete continuum of instruction without a ceiling; and the programs of the Eastern Michigan University Workplace Education Academy are similarly open-ended, though in practice they are limited by funding and by the numbers of students they can recruit. On another dimension of ambition, some skills and drills programs that developed from the functional context perspective emphasize only cognitive skills, while others—including CET, many of

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[60] One reason for offering activities for individuals, aside from the various schedules of adult workers, is apparently a common conception within adult education—that it should be available as a "drop-in service." The academy teachers feel that this is detrimental to good programs because it fosters an attitude that students can drop it and work from prepared curriculum materials, continuing the conventional approach of relying on the teacher and curriculum materials and thinking of knowledge as fragmented. In practice, the academy offers some individual activities and tutoring, but teachers hope they will interest students in signing up for the regular courses.

the Ohio applied academics courses, and some community college programs—emphasize work-related behavior as well. Programs driven by whole-language and the search for meaning have different conceptions of competencies altogether. Although they certainly strive to enable students to read, write, and speak with facility and to use mathematics for both routine applications and for problem-solving, they also seek to develop self-reflection and independence in students, to allow them to take more responsibility for learning so that they can define for themselves what they need, and to pursue learning independently. This capacity may be valuable in employment, but it is also applicable to every sphere of life; it is, in effect, problem-solving ability very different from that embedded in conventional skills and drills.

A second obvious observation about the alternatives described in this section is that they vary enormously in their pedagogy. The functional context programs that in other respects conform to skills and drills assumptions are quite different from those which have tried to integrate basic skills instruction with job skills training; the relative balance of skills and drills and alternative approaches in eclectic programs varies enormously, in ways that are quite difficult to describe. Furthermore, when we examine programs with different mixes of teaching methods, it is often difficult to understand what programs are trying to accomplish, never mind to evaluate their effectiveness. The consistency of different components drawn from different philosophies and styles of teaching, the motivation that different elements provide or fail to provide to students, the ways in which students experience these eclectic programs, the possibilities that certain elements will be rendered meaningless by others—these are questions which are extremely difficult to answer. While the assumptions and the internal consistency of a well-developed pedagogy such as skills and drills are clear and we are beginning to understand the basis of meaning-making, eclectic mixtures are more baffling to us.

These twin themes—the variation in ambitions among different programs and uncertainty about effectiveness—will return in the final section when we examine possible directions for future policy. For the moment, it is sufficient to note that there are substantial alternatives to skills and drills, following several different lines of development. Many of them have substantial promise in remedying some persistent problems in remediation—the motivational problem, the fact that many adults report skills and drills programs to be boring and meaningless, the irrelevance of many programs to subsequent education or job training, and the fact that most remedial programs violate the conventional

assumptions of good practice in adult education. Above all, the simple fact that many adults have not learned through skills and drills in schools suggests that trying skills and drills one more time is senseless and that a new approach is appropriate. But even at a more basic level, the existence of different pedagogies suggests that a more experimental approach is both possible and necessary—one in which, as a matter of federal and state policy, remedial programs begin to vary their approaches and evaluate the effects carefully.

DIRECTIONS FOR FUTURE POLICY

Every director of a remedial program whom we interviewed forecast an increasing demand for remedial education. They expect a continued expansion of developmental education in community colleges and continued pressure on the adult education system. The JTPA program has begun to emphasize longer-term training for the most disadvantaged individuals, so JTPA administrators also predict the need for more basic skills training. Most welfare-to-work programs have found greater academic deficiencies than they predicted, so welfare administrators also see a need for more remediation than the system is currently providing. Most forecast a continuing increase in the students leaving high school who are unprepared for the labor force. The "new demographics"—the increase in children born in poverty, the relative increase in minority children, and the continued immigration of people from the non-English-speaking counties of Asia and Latin America, all increasing the population in need of adult education—is now consistently cited as another source of demand. The furor over rates of illiteracy also suggests that there is a great deal of hidden or latent demand for adult education and the discovery of new forms of illiteracy—now with debates over "workplace literacy"—bolsters that opinion. If administrators of remedial programs were entrepreneurs in a conventional market, they would be ecstatic about the booming demand. As it is, they face increasing demand with dwindling resources—and the future looks pretty dismal.

Clearly, then, the direction of remedial education is far from academic. The current system of programs spends large sums and enrolls large numbers of individuals to achieve results which are uncertain at best, and nonexistent at worst. Continuing to expand the current system without substantial changes in the way the system operates seems foolhardy. In this section, then, we propose some directions that policy might take,

concentrating on federal issues. Since federal policy often shapes state practice, especially in the areas of vocational education, job training, and welfare, we expect that changes in the federal role will influence state policy as well. If nothing else, the federal government can play a role in research, evaluation, and the analysis of alternative directions for remedial education that can influence state and local developments.[61]

In thinking about future directions, it is helpful to consider two different kinds of issues. The first includes those that can be addressed now—with current institutions, practices, and levels of funding. The second includes those problems that are much larger in scope, problems that call for fundamental changes in the institutions providing K-12, adult, and remedial education and substantial increases in funding that may seem unattainable for now. Unfortunately, the issues we have included in the second set include the most basic questions of purpose, so the way we have posed issues may seem backwards. However, we think it important to begin the process of re-examining and reforming the current system of remediation rather than remaining paralyzed by the impossibility of the task; so we begin with some relatively simple steps that could still provide the foundation for more substantial changes later.

Reforms for Now: Coordination, Effectiveness, and Pedagogy

Given the existing resources and institutions that provide remedial education, there are three kinds of reform that can be undertaken without substantial increases in resources or institutional reconstruction. The first involves coordination. In one sense, we see a great deal of coordination in the existing system of remediation. Even though most communities have a large number of basic skill providers, there is little outright duplication, partly because the demand is so great and the needs of potential students are so varied that every program can find its own niche. There is also a great deal of referral among programs, especially from federally funded programs with constrained resources—JTPA and welfare programs—to the largely state-supported programs in adult education and community colleges, which are more likely to have open-ended funding based on attendance. But rather than being a source of comfort, the current patterns of coordination

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61 Many of our recommendations are consistent with those of Chisman (1989), though his recommendations do not stress the issues of evaluation and pedagogy as strongly as we do.

are worrisome because of the lack of mechanisms to follow individuals among programs; from the viewpoint of individuals, the system probably appears random, unplanned, and poorly articulated. That is, the coordination through referral that now takes place does not ensure that individuals receive the services they need. Until there are better ways of tracking students—to see whether they do enroll in a program to which they are referred, complete the program, and then return for job skills training—the current referral system must be considered a black hole into which individuals disappear, never to return to the education and training system.

We are also concerned with the inattention to the quality and effectiveness of the programs to which individuals are referred. We found almost no instances in which programs have any information about even the crudest measures of quality (such as completion rates) of the remedial programs to which they refer individuals. Indeed, even those using their own resources for remediation—like many JTPA and welfare programs—have consistently failed to articulate any policy about basic skills instruction or any concept of what such programs should include. (By and large, administrators seem relieved to find any programs to accept their low-performing students. Because they see themselves as job trainers, vocational educators, or case workers, and not as adult educators, they don't want to establish their own programs.) We are particularly concerned with the most common practice of referring individuals to the adult education system: The extraordinarily high rates of noncompletion in ABE, the lack of evidence about outcomes, and the fact that most ABE programs follow conventional skills and drills approaches organized around completing the GED indicate that the most extensive referrals are being made to the least effective programs. In contrast, community college programs are in many cases more extensive, establish more meaningful goals such as entry into college courses or vocational education, and are much more likely to experiment with eclectic approaches to teaching.

Our first recommendation, then, is that coordination between remedial education, on the one hand, and vocational education and job training, on the other, needs to be more carefully considered. Referrals without tracking mechanisms and referrals to programs of unknown effectiveness are likely to be ways of diverting individuals from access to vocational education and job training, not ways of coordinating the different resources of a community. As a result, programs providing job training and vocational education—JTPA, welfare programs, community colleges, technical institutes, and area vocational schools—should as a matter of federal or state policy establish tracking mechanisms for

individuals they refer elsewhere, establish policies and goals for the remediation to which they refer individuals, and consider more carefully whether established programs meet the goals set for remediation. To be sure, it may be possible to meet these goals in various ways: A community could establish a centralized clearinghouse, for example,[62] and those areas where a community college provides almost all adult education and vocational education[63] will find it easier to coordinate remediation as well. But however it is accomplished, the intent of our first recommendation is to improve the current situation where referral takes place with little knowledge of the consequences.

Obviously, the intent of the first recommendation is to require programs to refer individuals only to adult education programs that are effective, and this raises the second substantial problem: the task of examining more thoroughly the effectiveness of remedial programs. The current situation—in which some programs don't even have enrollment information, most don't keep data on completion rates, and almost none have even the crudest measures of outcomes—is one in which there is no way of improving the system because there is no information about which components work well and which are ineffective. We recommend, therefore, that resources for evaluation be increased. In particular, because states are often too small to develop their own evaluation programs, we recommend that federal agencies—particularly the Departments of Education, Labor, and Health and Human Services, with their responsibilities for the federal ABE program, vocational education, JTPA, and JOBS—take more seriously the task of evaluating remedial and adult education. Such evaluation should take two forms: the support of sophisticated evaluations, including those using randomized assignment and multiple approaches to remediation, in designs that would address which approaches are most effective for which individuals; and the development of smaller-scale, less sophisticated evaluation mechanisms that can help individual programs judge whether their students and clients are making adequate progress.

The lack of evaluation in developmental and remedial education is one of the most common complaints over the past twenty years (Roueche, 1968; Roueche & Snow, 1977;

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[62] In a sense, a structure for doing this has been created in places where there has been an effort to centralize all employment and training funds and to allocate them among providers in a rational way. This has been done, for example, in Hartford, and it was the intent behind the Massachusetts effort to establish centralized control over education and training funds in Massachusetts; see Grubb et al. (1990).

[63] See for example, the model in which the community college dominates all vocational education and job training in Grubb and McDonnell (1991).

J. E. Roueche, 1983), and it is not clear why our recommendation for improved evaluation should make any more difference than the previous appeals. However, several developments make the problem of evaluation even more urgent now than it has been in the past. One is simply that the magnitude of the problem has continued to increase, and the funds being spent on remediation are clearly enormous (though unknown with any precision)—and the underlying causes show no signs of abating. Second, while the majority of funding for remediation comes from state governments, the role of the federal government has clearly increased with the resources in the ABE program, those in the Vocational Education Act used for developmental education, the shift in the priorities of JTPA toward individuals with more skill deficiencies, the establishment of JOBS, and the new workplace literacy programs funded by the Department of Education. The expansion of federal funding suggests a new responsibility in evaluation to make sure these funds and the state resources they leverage are not badly spent.

To be sure, the recommendation to improve evaluation is itself fraught with conceptual and technical problems. The technical difficulties include the usual issues that arise in devising evaluations of programs for which noncompletion is high, control groups are difficult to establish, selection effects (e.g., the tendency for more motivated individuals to enter programs) are powerful, and long-term results may differ substantially from short-term gains. But these pale before an obvious conceptual hurdle: Evaluation requires defining and measuring the outcomes of a program, and defining appropriate outcomes involves the deepest debates about what literacy entails and what this country wants of remedial education. Outcomes could be measured with conventional test scores or attainment of the GED, for example; but this outcome defines literacy and numeracy in terms of narrowly defined skills and reinforces pedagogies based on skills and drills. Those advocating whole language approaches have developed quite different forms of assessment, using open-ended questions, conversations between teachers and students, portfolios, self-evaluation, and other techniques still in early stages of development[64]—but these methods cannot be coded and quantified as standardized tests can. Outcomes could be measured by the success of individuals in subsequent or concurrent job training; but students in remedial programs may have different goals or may have trouble in job training for reasons that have little to do with their command of basic skills. Similarly, it is

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64 See, for example, Goodman, Goodman, and Hood (1989); see also the sharp interchange between McKenna, Miller, and Robinson (1990) and Edelsky (1990) on the need for evaluation of whole language approaches and the form such an evaluation might take.

tempting to measure effectiveness in terms of subsequent employment, earnings, welfare dependency, mobility up career ladders, employer satisfaction, and other measures of labor market success, but doing so assumes that the economic consequences of programs are more important than other effects, and variations in labor markets create problems in comparing programs in different areas. Those who have discussed literacy have elaborated what its purposes are, developing conceptions of "multiple literacies" in different contexts that further complicate the measurement of outcomes.

Indeed, the most difficult questions we raise in the next section are those about purpose, and it is logically impossible to carry out evaluations without resolving these questions—at least partially. However, the issue of evaluation is much too important for us to wait until we as a nation have decided what we want from remedial programs. The only solution to the conundrum of how to evaluate programs whose purposes we have not adequately defined is to begin developing evaluations with many outcome measures, including those from different ideological positions and pedagogical traditions. Only with such multi-dimensional evaluations will it be possible to move toward a better understanding of what different programs can and cannot accomplish.

Finally, the issue of evaluation raises again the question of pedagogy. Our third recommendation is that those with influence over remedial programs—policymakers, administrators, teachers, researchers, evaluators—need to confront the issue of appropriate pedagogy. As we argued in Section Three, "The Nature of Effective Programs: The Conventions and the Structure of Skills and Drills," the usual evaluations—which compare a particular program's members to a control group that receives no remediation to determine whether the program has any effect (usually on test scores)—pose the question in a way that the only decision can be to continue or abolish the program. If evaluations are to be useful for improvement, however, they must compare alternative approaches and pedagogies—different student-teacher ratios, different intensities, different mixes of individual and group instruction, different mixes of computer-based components, alternatives to skills and drills, different uses of functional context training, and different kinds of eclectic approaches. Improvement of remedial programs and the evaluation that would help improvement need to consider pedagogy more seriously than has been true in the past.

Here, too, there is an obvious barrier. Policymakers, administrators, and most researchers contributing to national policy debates typically don't discuss pedagogical issues. They have different training than teachers; they have different concerns, often far removed from the classroom. The past eight years of debate over education has failed even to raise the question of whether teaching methods are appropriate.[65] Above all, teaching methods have always been nearly impervious to the control of administrators and policy-makers. If careful evaluation did confirm, for example, that methods based on skills and drills are ineffective for some students and for certain educational goals, then it would be difficult to force programs to adopt different methods by using the conventional regulatory mechanisms of policy. A much more elaborate process of revising teacher training programs, changing certification requirements, eliminating the now familiar assessment mechanisms (standardized tests, for example) that encourage skills and drills, and promoting good practice by demonstration and example would be necessary.

But, unfamiliar as it is, we see no way to evade the issue of pedagogy. The *prima facie* case against the skills and drills methods that dominate remedial education is too powerful to ignore. The high dropout rates, the many reports of student dislike and boredom, the lack of any substantial evidence that programs work all outweigh the occasional hopeful stories about individuals who have succeeded in the system. The logic of using a method which has previously failed many adults in remedial programs—individuals who have not learned basic academic competencies through eight to twelve years of conventional schooling—is incomprehensible. The ambitions of most skills and drills programs—which hope only to get their students through arithmetic operations with fractions and decimals, through reading for simple comprehension only, through writing a simple paragraph, through a GED exam with uncertain consequences—are painfully limited, especially in a period when national pundits and business interests are calling for "higher-order" skills.

These three issues—coordination, effectiveness, and pedagogy—are tightly linked. The appropriate coordination among vocational education, job training, and remedial education programs cannot take place without evidence about effectiveness. Better

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[65] The only partial exception involves the discussion of teacher professionalism. Professionalized teachers would have more autonomy to develop their own methods, and so professionalism is consistent with novel approaches to teaching—but those in favor of greater professionalism (e.g., Holmes Group, 1986) have never clarified how greater autonomy will lead to different and improved teaching.

information about effectiveness cannot be developed without considering alternative pedagogies, and the actions necessary to improve programs will need to consider how to put different teaching methods into place.

Reforms for the Future: The Purposes of Remedial Education

A great deal of improvement in remedial and development education programs is possible without settling the overarching issue of purpose. Ultimately, however, the programs we as a nation implement depend on decisions, explicit or implicit, about goals. Eventually, then, we must confront the ambiguities raised in Section One and decide what capacities are necessary for adults in our society and what institutions are responsible for passing them on.

If the problem is one of deficiencies in basic skills—defined as the capacity to do arithmetic, to read simple passages for comprehension, and to carry out simple writing tasks such as filling in applications and forms—then the goals of remedial programs are relatively simple. To be sure, the methods for attaining these goals remain unclear; the efficacy of skills and drills remains to be determined, and the many alternatives, including functional context training, still need to be assessed; but at least the intended outcomes can be readily measured.

The first complexity is to consider whether the issue is less one of basic skills than of work habits. The volume of complaints about the lack of discipline, tardiness, and absenteeism among employees has increased, and many education and training programs have introduced "employability skills" into their curriculum. But when we shift the focus of remediation from basic academic skills to work-related behavior, the outcomes—presumably behavior on the job defined as appropriate by the employer—are affected by much more than prior training, including motivation, wages, working conditions, and the nature of supervision. The real issue is not whether training programs can teach individuals to show up on time, work diligently, and obey their supervisors in jobs with decent earnings, good working conditions, stable employment, and reasonable rules. Instead, the question is whether they can induce such good behavior in the low-wage jobs, with unstable employment and little intrinsic satisfaction, for which short-term programs

like JTPA and welfare programs (and some short-term vocational education as well) prepare people. There may in fact be a serious problem with the discipline of the labor force, as with the discipline of students in schools; but if remedial programs are asked to be accountable for behavior which has many other causes outside their control, then it becomes imperative to face the limits of what education and training can do.

Raising the question of work discipline leads to yet another complexity. Work habits are not essentially cognitive skills in the sense that the skills and drills approach assumes reading and math to be; they involve interpersonal behavior. Similarly, the recent reports calling for greater capacities in listening, negotiation, the ability to work cooperatively in groups, and other interpersonal skills are raising questions about skills that again are not cognitive, but involve interaction with others. Here is where the skills and drills approach—with its emphasis on individual and decontextualized learning, sometimes, as in the case of computer-based programs, without any interaction whatsoever with other people—is at the greatest disadvantage because there is absolutely nothing in these methods that develops interpersonal skills. The alternatives to skills and drills, on the other hand, insist that knowledge cannot be divorced from its social setting and that it requires interpersonal interaction to make sense of anything; these approaches, therefore, have substantial advantages in teaching interpersonal capacities. If the basic problem in this country is the interaction of individuals at work, then our fundamental approach to education in general, as well as remedial education in particular, must be abandoned in favor of teaching methods that stress rather than eliminate interpersonal dimensions.

But we can complicate the problem even further. If the challenge is, as *A Nation at Risk* stated, a need for the New Basics, or if the United States requires a set of "foundation skills" at "world-class levels" to confront the stark choice between "low wages or high skills," then low levels of cognitive skills are insufficient. In this case, the goals of current remedial programs—which typically aim to increase test scores by one or two grade levels, or to prepare their students to pass the GED—are woefully inadequate, and the elementary and secondary education system itself must be completely remade because only a small fraction of its students complete twelve years of schooling with good command of the New Basics or foundation skills. At this point, of course, it becomes necessary to confront the inadequacy of resources in the existing remedial system: The fiscal limitations which have plagued adult education, JTPA, and welfare programs and the time limitations imposed on

remedial programs have undermined programs with even limited ambitions, and are clearly inadequate once we escalate the demands we place on our education and training system.

If we acknowledge that much higher levels of cognitive capacities may be necessary, there is an interpersonal and behavioral dimension as well. If, as some commentators and commission reports have claimed, the problem is a lack of judgement on the part of workers, then we are in serious trouble. Judgement—which requires the ability to weigh conflicting purposes and to evaluate the relative importance of economic, moral, political, and interpersonal demands on any particular decision—requires the most subtle combination of cognitive and interpersonal capacities. It is hard to know how to train for judgement, especially in a system which strips any initiative and responsibility from the lower levels of education and training. Furthermore, the failures in judgement are ubiquitous: If the low- and middle-level workers of this country seem to lack judgement, so do our political and business leaders whose exploits of dishonesty, greed, poor business decisions, and simple selfishness have accelerated over the past two decades to the detriment of politics and business alike. If good judgement is what we are after, we have a long way to go.

A final complexity involves the question of who should benefit from reforms. If we take many recent commission reports at face value, the major challenge is to enhance the productivity of the labor force in relatively low-skilled jobs. That is, *employers* should be the major beneficiaries of enhanced education and training in the form of higher productivity, rather than employees gaining through higher wages or more stable employment, or a greater capacity for political participation, or enhanced capacities as parents or neighbors. This, in turn, leads to the current situation: As we discuss *Workplace Basics: The Skills Employers Want*, we generate long lists of the skills required in employment and introduce relatively narrow and employment-specific forms of training. In this discussion, what individuals want from adult education and remedial education is nowhere considered. In the first instance this represents a simple inequity, since the interests of employers are represented but those of employees are not. But it also suggests a source of ineffectiveness as well, since it violates a given of adult education—that programs must meet the needs of adults if they are to be effective. Since so many of the skills and capacities required in the labor force—including work-appropriate behavior, cooperation and teamwork, and judgement—involve motivation, it is difficult to promote the interests of employers through narrow training programs while denying the interests of

employees. Over the long run, overly specific training or remedial programs that fail to meet the needs of those enrolled will suffer high dropout rates and low enrollment rates—like many current programs—and will serve the interests of no one. Such programs will fail to provide a labor force adequate to the demands of the future, requiring another generation to invest in their own round of reform.

If we take seriously the current storm of interest in the education and training of the labor force, then, we must move beyond the remedial programs concentrating on simple arithmetic and reading that we now have. Instead, we must contemplate much more sophisticated reforms that reshape the K-12 education system as well as remedial programs, that change the nature of teaching throughout the system, and that provide much more intensive forms of education to larger fractions of the population than is now the case. This is, of course, a huge undertaking, and one whose cost has not been considered in any way. Such a proposal seems unrealistic in a period when the federal government continues to run enormous deficits, and when most state governments are facing fiscal constraints of their own, and for this reason alone the question of purpose is one whose resolution will be a long time coming.

But such issues are decided every time a decision about remediation is made. The plans to extend yet another skills and drills adult education program, to experiment within a community college developmental education program, to fund a new program of workplace literacy programs without considering their pedagogy or requiring substantial evaluation, or to establish an experimental program following the whole language approach—all these plans embody implicit decisions about purposes. The current system of remediation is one in which there has been an implicit decision to aim for a low level of skill improvement in simple reading and arithmetic, to prepare individuals for entry-level jobs at close to the minimum wage—jobs which cannot realistically make them self-sufficient. This is a goal that—as far from attainment as it is—is still severely limited compared to the ambitions that have been established by recent commission reports calling for a world-class workplace. As a nation, we need to confront these decisions about purposes explicitly, rather than leaving them to the whims of convention and financing. The simpler issues of coordination, evaluation, and pedagogy cannot be fully resolved until we do so.

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Appendix A

REGIONS SELECTED FOR TELEPHONE INTERVIEWS

Appendix A
REGIONS SELECTED FOR TELEPHONE INTERVIEWS

California

- San Diego
- San Francisco

Connecticut

- Hartford

Florida

- Broward County
- Duvall County

Georgia

- DeKalb County
- Heart of Georgia/Oconee County SDA
- Southwest Georgia SDA

Illinois

- Bloomington SDA
- Western Illinois SDA
- Vermillion County SDA

Michigan

- Berrien-Cass-VanBuren SDA
- Kalamazoo-St. Joseph Counties
- Wayne County

North Carolina

- Buncombe County
- Neuse River Job Training Consortium
- Winston-Salem/Forsyth County Consortium

Tennessee

- Columbia State Community College SDA
- Memphis
- Motlow State Community College SDA

Wisconsin

- Milwaukee
- Southeast Wisconsin SDA
- Southwest Wisconsin SDA

Appendix B

REMEDIAL PROGRAMS VISITED

Appendix B
REMEDIAL PROGRAMS VISITED

Berkeley Adult Schools, Berkeley, CA

Center for Employment Training, San Jose, CA

Center for Employment Training, Oakland, CA

Eastern Michigan University Workplace Education Academy, Dearborn, MI

East Bay Conservation Corps Learning Center (using the Comprehensive Competencies Program), Oakland, CA

Employment Training Office (using the PLATO system), Napa County, CA

San Joaquin Delta Community College, Stockton, CA

Solano Community College, Fairfield, CA

STEP (Summer Training and Employment Program), Galileo High School, San Francisco, CA

Additional community colleges interviewed by phone (all in California):

Gavilan Community College

Long Beach City College

San Jose City College

Southwestern Community College

Appendix C

INTERVIEW PROTOCOL

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Appendix C
INTERVIEW PROTOCOL

I. Questionnaire for JTPA Service Delivery Areas

Contact Name _____

Agency _____

Phone Number _____ Date _____

1. Does your program provide any basic education or remedial education (through contractors, formal referral agreements, or directly: where client support or service is funded by JTPA)?

_____ NO

a. Have you provided remedial education previously? Under CETA?

_____ NO

_____ YES: Why do you no longer offer remedial or basic education?

(Probe for the role of performance-based funding and funding reductions.)

b. Do you make any provisions for clients to get remedial education elsewhere that is not funded by JTPA?

_____ NO

_____ YES: Do you know how many of these clients actually enroll in remedial programs you refer them to? _____ *and*

About how many return to your programs after completing remedial education?

_____

(GO TO Question 15 if not providing any remedial education)

_____ YES *(continue survey)*

2. What fraction of JTPA clients (all titles) receive remedial education? _____

How many individuals per year? _____

What different types of programs are offered, and how many clients per year are enrolled in each?

Program/Subject Annual Enrollment

_____

(If many programs, ask if they will mail information about programs and enrollment)

3. Who identifies clients in need of remedial education, the SDA or subcontractors?

_____ Centrally, by the SDA

What test or assessment mechanism is used to select clients into remedial education?

_____

What score or cutoff is used to identify those in need of remedial education?

_____

_____ By subcontractors

Are there SDA guidelines about the test or assessment mechanisms used to select clients into remedial education, or is this left to the discretion of subcontractors? What tests are used (if the SDA knows)?

_____

_____

4. Is remedial education provided by

_____ the SDA itself? Remedial education program director's name/phone:

_____ *(SKIP to 5.)*

_____ one contractor for all JTPA clients in the SDA?

_____ or individual subcontractors?

4a. What organization(s) is the (are the) main provider(s)? *(list)*

_____

_____

_____

4b. Who could I contact at this (these) program(s) to get further information? *(add to above list)*

4c. Are there SDA guidelines for subcontractors about the nature and duration of remedial education?

____ NO

____ YES: Would you send us a copy? _____ yes _____ no

5. In general, what kind of remedial education is provided by subcontractors or the SDA?

_____

6. What is the relationship between remedial education and job skills training? Does remedial education

_____ precede job skills training?

_____ or is it concurrent? *(Ask 6a)*

_____ or is it integrated into skills training?

6a. *If concurrent*, how many hours do individuals spend in remedial education and in job training—total, over the course of their enrollment?

_____ hours in remedial education

_____ hours in skills training

Is scheduling a problem? _____ yes _____ no

7. Is remedial education ever tailored to the specific occupational area of skills training?

_____ NO

_____ YES: How _____

8. How does the SDA define completion of a remedial program?

_____ hours completed or other length of education

_____ mastery of a set of competencies

_____ score increased by a certain amount

_____ minimum test score achieved

_____ Other _____

9. Does the SDA collect any data on the rates of completion of JTPA clients in remedial programs?

_____ NO: Is there any evidence about whether completion rates are a problem?
Describe: _____

_____ YES: Can we get a copy of your data on this? _____ yes _____ no

10. Does the SDA collect any information about the effects of its remedial programs?

_____ NO: Does it require any of its subcontractors to collect such information?
_____ yes _____ no

_____ YES: *check:*
_____ pre- and posttest scores
_____ placement rates of those who have and have not completed remedial programs
_____ Other _____

11. Does your state have any policies about remedial or basic education in JTPA, the types of programs offered, or the assessment instruments used?

_____ NO

_____ YES: Describe _____

11a. Have any resources—such as 8-percent funds or the Governor's 6-percent incentive funds—been earmarked specifically for remedial education?

_____ NO

_____ YES: which?_____

12. *If the SDA does **not** contract with a community college or adult school to provide remedial education,*
have you ever considered working with a community college or adult school to provide remedial education?

_____ NO

_____ YES: Why was the decision made to offer remedial education independently of these institutions? _____

13. *If the SDA **does** subcontract with an educational institution:*
Why was the decision made to offer remedial education through this program?

_____

Have any special problems arisen because of this relationship?

_____

14. Do any of your classroom skills training programs or OJT programs limit enrollment to those with specified scores on standard tests?

_____ NO

_____ YES: Which are these, and what are the test score cut-offs:

Program Test or subject & score or grade level

_____

15. Does the SDA have any occupational skills training programs offered in conjunction with the local community colleges, technical institutes, area vocational schools, or adult schools?

_____ NO

_____ YES: What are these programs?

_____

Can we get a list of all SDA subcontracts, including numbers enrolled and type of training available from each? _____ yes _____ no

16. Does the SDA provide any services for welfare recipients participating in the state's JOBS program under a contract or any other formal arrangement—that is, in some institutionalized arrangement, as distinct from a system where welfare recipients enroll individually?

_____ NO *(go to 16a.)*

_____ YES: What are these services?

_____

Is the basic/remedial education provided to welfare recipients different from that provided to other JTPA clients? In what ways? (Some welfare clients may come in having already had remedial education.)

_____

16a. Who should we contact in the local welfare-to-work program to find out what kinds of remedial education programs they offer? Name and phone:

_____

17. What do you think the future of remedial education in JTPA is likely to be? What policies do you anticipate your SDA developing in this area?

_____

18. References for subsequent contacts:

a. What are the community colleges, technical institutes, and area vocational schools in your area (whether or not they work with JTPA)?

_____

b. Are there other important providers of remedial education, like adult schools or skill centers?

_____

c. Who else should we talk to about remedial education in your local area or your state, from any welfare, employment, or educational programs?

_____

Go back and remind respondent what he said he would send you and give him your name and address.

II. Questionnaire for Postsecondary Institutions

Contact Name _____

Agency_____

Phone Number_____ Date_____

This questionnaire is intended for community colleges, technical institutes, area vocational schools serving adults, and adult schools. It should be asked of an administrator with some responsibility for the overall program of the institution, rather than the individual who directs the remedial education center or program itself; this might be a dean of instruction or the director of the counseling center or the matriculation center. Remember throughout that lots of remedial education will be offered in courses that sound like regular academic courses—that is, "developmental" English and math courses.

1. Does your institution provide basic education or remedial education?

_____ NO: Do you make any provisions for students to get remedial education elsewhere?

_____ NO

_____ YES: Do you know how many of these clients actually enroll in remedial programs you refer them to? _____

About how many return to your programs after completing remedial education? _____

Name of a contact person _____

Phone_____

(GO TO Question 15 if not providing any remedial education)

_____ YES *(continue)*

2. Who assesses students' remedial needs?_____

_____ the campus centrally

What test or assessment mechanism is used to assign students to remedial classes?

_____

What score or cutoff is used to identify those in need of remedial education?

_____

_____ decentralized (departments, instructors, contractors)

Are there college-wide guidelines about the test or assessment mechanism used to assign students to remedial education? What tests are recommended?

_____

Name of contact person(s) in charge of assessment (whether central or not):

_____

3. What fraction of your students receive remedial education? _____

3a. How many individuals per year? _____

3b. How is remedial education defined in this count? (only students in special remedial programs, all students taking any basic skills courses, or?)

_____

Can you provide us with data about the enrollments in each of your remedial programs and in remedial courses? _____ yes _____ no

4. How is remedial education delivered on your campus:

_____

_____

_____ offered in special remedial education programs, learning labs, and so on:
Name/phone program director _____

_____

_____ offered through remedial classes in regular academic departments:
Name/phone department chairpersons _____

_____

5. Are there campus policies about the nature and duration of remedial education?

_____

Can you send us a copy of your policy? _____ yes _____ no

6. What is the funding for these remedial efforts?

_____

_____ state funded:

_____ from a special appropriation for remedial education

_____ from general-purpose funds

_____ from federal funds

_____ Perkins funds for the disadvantaged

_____ federal ABE funds

_____ local funds

Probe to see whether the funding sources are multiple or not, whether they are categorical or general, or whether there is any support for remedial education out of purely local funds or funds which could be used in other ways.

_____

7. For vocational students, what is the relationship between remedial education and vocational education? Does remedial education

_____ precede voc ed?

_____ or is it concurrent? *(Ask 7a.)*

_____ or is it integrated into voc ed?

7a. *If concurrent*: How many hours does an individual spend in each component (remedial education and vocational skills training)?

_____ hours in remedial education

_____ hours in skills training

Is scheduling a problem? _____ yes _____ no

(This question may not make sense in a community college where students are typically all enrolled in several courses, so that much enrollment will be concurrent.)

8. Is remedial education ever tailored to the specific occupational area of voc ed?

_____ NO

_____ YES: How? _____

9. How does the institution define completion of a remedial program?

_____ hours completed or other length of education

_____ mastery of a set of competencies

_____ score increased by a certain amount

_____ minimum test score achieved

_____ Other _____

10. Does the institution collect any data about the rates at which students complete their remedial education?

_____ NO: Is there any evidence about whether completion rates are a problem?

Describe:_____

_____ YES: What is the approximate completion rate? _____

Can we get a copy of your data on this? _____ yes _____ no

11. Does the institution collect any information about the effects of its remedial programs?

_____ NO: Do departments or other campus units have such information?

Who: _____

_____ YES: *check:*

_____ pre- and posttests

_____ academic success of those who have and have not completed remedial programs

_____ Other _____

12. Does the institution provide any remedial services to students from other educational institutions, to JTPA clients, or to welfare recipients in welfare-to-work programs?

_____ YES: How did this kind of collaboration come about? Were there any special problems in establishing this collaboration?

_____

_____ NO: Have you ever considered working with JTPA or welfare programs? If so, why don't you work with them now?

_____

13. Does your state have any specific policy about the remedial education you offer or about assessment tests used?

_____ NO

_____ YES: Describe _____

13a. Does the state provide any funds specifically earmarked for remedial education in your institution? *(Funds might include Perkins funds for the disadvantaged and 8-percent funds in addition to state-appropriated funds.)*

_____ NO

_____ YES: which funds?

14. Do any vocational programs in your institution limit enrollment to students with specified scores on standardized tests?

_____ NO

_____ YES: Which programs are these, and what scores do they require?

Program Test or subject & score or grade level

_____

15. Does the institution have any skills training programs for JTPA or for welfare-to-work clients?

_____ NO *(go to 16.)*

_____ YES: a. What are these programs?

_____

b. Do welfare or JTPA clients have special remedial education needs?

What are their needs?_____

c. What has the institution done to meet their needs? Has it been difficult in any way? _____

d. Names of contacts in JTPA and welfare-to-work programs:

_____

_____

_____

16. What do you think the future of remedial education in your institution is likely to be? What policies do you anticipate your institution developing in this area?

_____

III. Questionnaire for Welfare-to-Work Programs

Contact Name _____

Agency_____

Phone Number_____ Date_____

1. Does your program provide basic education or remedial education for its clients (through contracts, referral, or directly)?

_____ NO:

Why not? *Probe for evidence of insufficient funding, concentration on job search assistance, start-up problems.* _____

_____

Do you refer individuals to other programs, to pursue remedial education on their own?

_____ NO

_____ YES: Do you know how many of these clients actually enroll in remedial programs you refer them to? _____ *and*
About how many return to your programs after completing remedial education? _____

_____ YES (continue)

2. Is there any state policy about the role of remedial education in welfare-to-work programs, for example about the sequencing of remedial education?

_____ NO

_____ YES: What is the policy and what was the rationale for this policy?

_____

(If not providing remediation, GO TO Question 13, skip 14, then continue)

3. What proportion of welfare-to-work clients receive remedial education? _____
How many individuals is that? _____
How does this compare to the proportion of clients in job search and placement?

_____

In skills training? _____

Can you send us data on the numbers of clients in each type of service (vocational skills training, job search, remedial education, ESL, etc.)?

_____ yes _____ no

4. Who identifies clients in need of remedial education?_____

_____

_____ the welfare agency, centrally

What test or assessment mechanism is used to select clients into remedial education? _____

What score or cut-off is used to identify those in need of remedial education?

_____

_____ another agency or subcontractors

Are there welfare department guidelines about the tests or assessment mechanisms used to select clients into remediation, or is this left to the discretion of the other agencies/subcontractors? What tests are used?

_____

5. Is remedial education provided by

_____ one provider for all welfare-to-work clients in the program?

_____ a series of subcontractors?

5a. What organization(s) is the (are the) main provider(s): *(list)*

_____

_____

_____

5b. Who could I contact at this (these) program(s) to get further information? *(record on above list)*

6. Are there department guidelines about the nature and duration of remedial education?

_____ NO

_____ YES: Could you send us a copy of these guidelines? _____ yes _____ no

7. In general, what kind of remedial education is provided to your clients?

_____

8. How is remedial education for your clients funded?

_____ from the welfare department's budget for the welfare-to-work program?

_____ by other institutions or other sources of public funding (e.g., by community colleges or adult schools from their state ADA funds)?

Specify: _____

9. What is the relationship between remedial education and job skills training?

_____

9a. Do most of those who receive remedial education also receive job skills training or vocational education? _____ yes _____ no

9b. Does remedial education

_____ precede job skills training?

_____ or is it concurrent? *(go to 9c.)*

_____ or is it integrated into skills training?

9c. If concurrent, what amount of time is spent in each component?

remedial education _____

job skills training _____

Is scheduling a problem? _____ yes _____ no

9d. Is remedial education ever tailored to the specific area of skills training?

_____ yes _____ no

10. How does the program define completion of a remedial program?

_____ hours completed or other length of education

_____ mastery of a set of competencies

_____ score increased by a certain amount

_____ minimum test score achieved

_____ Other _____

11. Does the department collect any data on the rates at which welfare clients complete their remedial programs?

_____ NO: Is there any evidence about whether completion rates are a problem?

Describe: _____

_____ YES: What is the approximate rate? _____

Can we get a copy of your data on this? _____ yes _____ no

12. Does the department collect any information about the effects of its remedial programs?

_____ NO: Does it require any of its subcontractors to collect such information?

_____ yes _____ no

_____ YES: *Check:*

_____ pre- and posttests

_____ placement rates of those who have and have not completed remedial programs

_____ success in subsequent coursework

_____ Other_____

13. *If the welfare office does **not** contract with an educational institution or JTPA program to provide remedial education,*

have you ever considered working with the community college, adult school, or JTPA program to provide remedial education?

_____ NO

_____ YES: Why was the decision made to offer remedial education independently of these institutions? _____

_____

14. *If the SDA does subcontract with an educational institution or JTPA program to provide remedial education,*

Why was the decision made to offer remedial education through this program?

_____

15. Does the welfare-to-work program have any skills training programs offered in conjunction with the local community colleges, technical institutes, area vocational schools, adult schools, or SDAs?

_____ NO

_____ YES: What are some of these programs?

Could you send me information on all such programs, including the number of your clients enrolled in each and the kind of training offered, as well as names of contacts at these institutions? _____ yes _____ no *(If no, get contacts now, on phone)*

16. What do you think the future of remedial education in welfare-to-work is likely to be?

_____

What policies do you anticipate your state and/or local program developing in this area? _____

_____

IV. Questionnaire for Providers of Remedial Education

Contact Name _____

Agency _____

Phone Number _____ Date _____

The subjects for these interview will vary: they will include the directors of programs operated by SDAs (i.e., from question I.5); the directors of remedial education centers operated by community colleges and other educational institutions (from question II.4); the heads of English, math, and other academic departments (from question II.4), in community colleges which handle remedial education in this way; the directors of remedial programs for welfare clients (from question III.6 and III.7), the individuals in community-based organizations (CBOs) responsible for remedial education (from question I.6)—anyone who has direct responsibility for the operation of remedial education.

1. How are individuals selected for this program?

   _____

   What tests or assessment mechanisms are used, and what scores or cut-off points are used to select individuals?

   _____

   Why do individuals referred to your program need remedial education? How will it benefit them? *(This question is intended to find out their general attitudes toward their clients and what remedial education is all about.)*

   _____

2. Does this program include individuals from several different programs or referral mechanisms (e.g., from JTPA and welfare programs and adult literacy programs) or just from one source?

   _____ One source

   _____ Several sources: How do the individuals from different programs differ?

   _____

   Could you send us enrollment information, including information on the characteristics of participants and how many are funded by JTPA, welfare, or other job training programs? _____ yes _____ no

3. What are the sources of funding for this program?

_____ JTPA
_____ Perkins
_____ Welfare
_____ State education
_____ ABE
_____ Other _____
_____
_____

(If the answer to this question is inconsistent with the information from the previous question, probe. For example, if there are JTPA clients enrolled but no JTPA funding, ask how their participation is supported.)

4. When individuals are referred to you, do you perform any additional assessment or appraisal?

_____ NO
_____ YES: What is the nature of this appraisal, and what are the results used for?

5. What method of instruction does this program use?

_____ Established curriculum: _____
Name and address of publisher: _____
_____ Locally developed curriculum. Name:
_____

If it is locally developed, get as much information about the philosophy and methods of instruction as possible.

5a. Subjects and grade/difficulty level: _____
_____
Why were these subjects chosen? _____

5b. Is the instruction _____ one-on-one or _____ group instruction?

5c. Is it computer-based instruction? _____
_____

5d. Is it _____ individualized (based on information from the initial assessment) or _____ is it standard for all who enroll?
Can the curriculum be changed for individuals who are having trouble?
_____ yes _____ no

5e. Is the program _____ self-paced or _____ group-paced?
How much of the program is teacher-directed, versus student-directed (i.e., by student choices of topics or exercises, by discussion rather than lecture)

_____

5f. Is the program _____ open-entry/open-exit, or _____ do individuals have to enter at fixed times?

5g. Does the program of instruction have a particular philosophy? (e.g., phonics versus whole-word; mastery learning; competency-based; whole language; integrated oral and written language; eclectic) _____

5h. Is the duration of remedial education _____ adjusted to each individual, or is it _____ fixed in length? If fixed, what is the duration/intensity? _____
If variable, what is the range of duration/intensity? _____

5i. What special problems have you encountered in using this curriculum? How could the curriculum be improved? _____

6. What kind of education and training specific to remedial education do instructors in the program have? _____
What kind of staff development or in-service training do you provide? _____

_____

What other characteristics do you look for in instructors? (Some programs may hire bilingual instructors, or those from the community, or those of the same race/ethnicity as students.) _____

7. What is the relationship between remedial education and job skills training?

7a. Do most of those who receive remedial education also receive job skills training or vocational education? _____ yes _____ no

7b. Does remedial education:

_____ precede job skills training?

_____ or is it concurrent? *(go to 7c.)*

_____ or is it integrated into skills training?

7c. If concurrent, what amount of time is spent in each component?

remedial education _____

job skills training _____

Is scheduling a problem? _____ yes _____ no

7d. Is remedial education ever tailored to the specific area of skills training?

_____ NO

_____ YES: How?_____

8. How does the program define completion of a remedial program?

_____ hours completed or other length of education

_____ mastery of a set of competencies

_____ score increased by a certain amount

_____ minimum test score achieved

_____ Other _____

9. How do you define success for individuals in your program, that is, what is the goal of your program, what do you want your clients to learn? (passing a test, reading newspapers, vs. workplace literacy?)

_____

10. Does the program collect any data on the rates at which students complete the remedial programs?

_____ NO: Is there any evidence about whether completion rates are a problem?

Describe: _____

_____ YES: What is the approximate rate? _____

Can we get a copy of your data on this? _____ yes _____ no

11. Does the program collect any information about the effects of its remedial programs?

_____ NO: If not, how does it judge the program's success? _____

_____

_____ YES: What outcomes are measured? *(pre- and posttests; placement rates of those who have and have not completed remedial programs; success in subsequent coursework; other?)* _____

Is there any long-term follow-up? What kind? _____

12. What do you think the future of remedial education in your program is likely to be?

_____

What policies do you anticipate your institution developing in this area?_____

_____